Instruments

THE MAGAZINE OF

Measurement and Control

Vol. 11
JAN.
1938
No. 1

TENTH ANNIVERSARY ISSUE • • IN TWO PARTS

PART TWO

THE 1938 INSTRUMENTS INDEX

Your new TAG INSTRUMENT CATALOGS are here!

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TENTH ANNIVERSARY ISSUE OF

Instruments THE MAGAZINE OF MEASUREMENT and CONTROL

Vol. 11, No. 1
January, 1938
Price $2.00
In Two Parts
Part Two

THE 1938 INSTRUMENTS INDEX

More Than a Directory

CONTAINING the answers to 99% of the inquiries which *Instruments* receives from subscribers, this Supplement may be likened to a set of phonograph records: it can only be "played" by a "pick-up." The simple "pick-up," which will place at your instant command a wealth of information, is merely your getting acquainted with this Supplement by reading this page. Therefore, it will amply repay you to do so now.

Section 1—"who makes what"—is the most important. Anyone who wants to know where he can buy or secure information on a certain product can turn to this section, find the product properly indexed and cross-indexed, and see under it the names of the manufacturers and sole representatives.

Indexing System. Products are indexed under the main word. In cases where a name is ambiguous, or where the item is known equally well under two or more names, companies making such devices are listed under one subject and cross-references inserted under the other headings.

Specific Terms. You never are in need of "a gage" but of some particular kind of gage. Therefore we do not list manufacturers under broad general designations. For example, we do not list any names under the main heading "Meters" but we give the sources of supply for numerous classes and types of meters. You will find frequency meters under "F," water meters under "W," etc. Moreover, we do not list any names under "Water Meters" but we give under proper sub-heads the sources of supply for whatever type of water meter you need.

Trade Names. An effort has been made to remove all proprietary trade names from Section 1 and include them in the Trade Names Index, Section 2.

Correctness of Designations. We have endeavored to list no firm names under specific main headings unless the instruments made by such firms belong there by virtue of their design and construction.

For example, an instrument for measuring Humidity (which is the water-vapor content of air and gases) does not belong under Moisture which is a term reserved for the liquid-water content; and vice-versa.

CONTENTS

1. Index to Instruments and Apparatus. In this section, products are listed alphabetically. Under each heading appear the names of (1) the manufacturers of this equipment and (2) the sole representatives of such manufacturers.

2. Index of Trade Names. In this section will be found every trade name, with the product it designates and the name of its manufacturer.

3. Directory of Laboratory Supply Houses. In this section are listed companies specializing in laboratory supplies, equipment, instruments and apparatus.

4. Directory of Manufacturers and sole representatives, with complete addresses.

Also a Colorimeter is an instrument for quantitatively measuring the chromaticity of a specimen by determining spectral distribution of transmitted or reflected luminous energy; and instruments called "colorimeters" which cannot yield color specifications belong under Color Comparators, Color Matchers, etc.

The same applied to sub-heads. Examples: (a) An instrument called the "——— Recorder" which does not produce a permanent graphic record on a chart or tape or film, is not a recorder; it may possibly be a "maximum-registering" or other type different from the ordinary indicating type. (b) An instrument called the "Integrating ———" or "Totalizing ———" may be nothing but a counting type belonging under the sub-head "Counting."

Completeness. More than 1000 manufacturers were canvassed by The Instruments Publishing Company in the last four months. Those that did not fill in our first questionnaire after one month received a second one. Again, a third questionnaire was sent to non-responders at the end of the second month. In the last few weeks we even sent representatives to call on manufacturers, urging them to check every listed item they made. Therefore, the omission of any manufacturer's name under any heading is due to the negligence of someone in his own organization.

No "Merchants" in Section 1 and All Dealers in Section 3. Every effort has been made to restrict the names in Section 1 to (1) the actual manufacturers and (2) the sole authorized sales agencies of manufacturers who do not or cannot conveniently sell directly to you. On the other hand, whenever you desire to order at one time a variety of equipment, made by numerous firms, you may find it most convenient to get in touch with a recognized, competent, "laboratory supply house." These houses are listed in Section 3.

Instruments' Further Service. This Index contains the answers to *only* 99% of your inquiries. If you cannot find the product or the name you want, don't hesitate to communicate with the Information Section, Instruments Publishing Co., 1117 Wolfendale St., Pittsburgh, and every effort will be made to furnish the information promptly.

Suggestions. We shall appreciate suggestions regarding:

1. Headings not at present found in this Index which should be there,
2. Firms listed erroneously, and
3. Other inaccuracies which may have crept in despite all precautions.

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M. F. BEHAR Editor

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Boston: James Condon, 6 Marlboro St. (Kenmore 2354); New York: 118 E. 28th St. (Lexington 2-4637); Chicago: R. F. Farnham, 201 N. Wells St. (Andover 4180); Cincinnati: E. Eggers, 2216 Kenilworth Ave. (Jefferson 4722); Philadelphia: R. K. Farnham, 1532 Cherry St. (Rittenhouse 2530).

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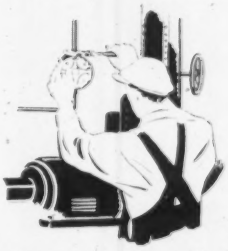

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E 1-48

Index of Instruments and Devices Used for Measurement, Inspection, Testing and Automatic Control

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See Testers, Abrasion

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Brown Inst. Co.
Consol. Ashcroft Hancock
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Ill. Testing Labs.
Mason-Neilan
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Pitts. Equitable Meter
Precision Thermo
Republic Flow Meters
Simplex Valve & Meter
Superior Meter Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.

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Bristol Co.
Builders Iron Fdry.
Cochrane Corp.
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R. Fuess, Inc.
Mason-Neilan
Pitts. Equitable Meter
Republic Flow Meters
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Ill. Testing Labs.
Kollsman Inst. Co.
Pioneer Inst. Co.

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ALTITUDE BAROMETERS
See Barometers, Altitude

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See Gas Analyzers, Ammonia

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R.C.A. Mfg. Co.
Sundt Engg. Co.
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United Cinephone

D-c.

Electro-Medical Lab.
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R.C.A. Mfg. Co.
United Sound Eng.

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ASPHALT TESTING APPARATUS

See Testers, Asphalt

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AUDIO-FREQUENCY OSCILLATORS

See Oscillators, Audio-Frequency

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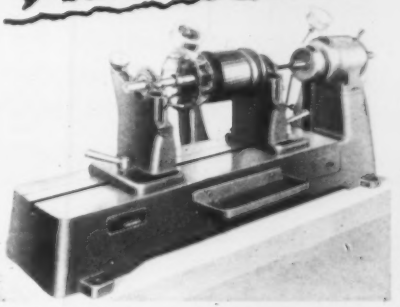

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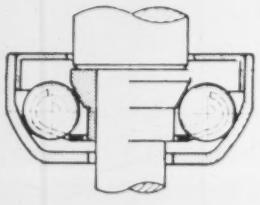

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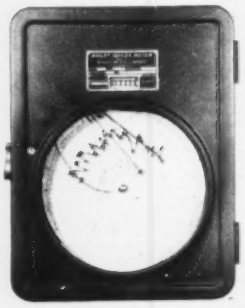

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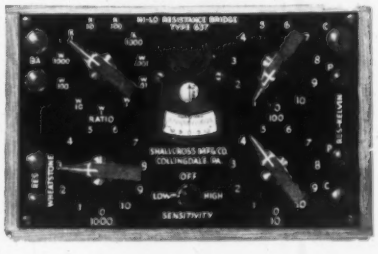

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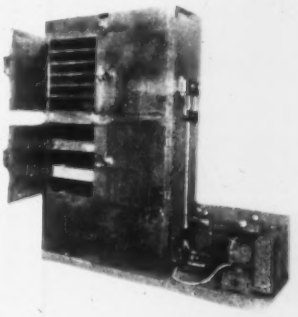

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General Elec. Co.
Internatl. Business Mach.
Standard Elec. Time
Seth Thomas
Warren Telechron Co.

Spring-drive
Cramer & Co.
Internatl. Business Mach.
Lux Clock Mfg. Co.
Seth Thomas

CLOUD & POUR TEST APPARATUS
Arc Glass, Inc.
Am. Inst. Co.
Eimer & Amend
Fisher Scientific Co.
Humboldt Mfg. Co.
George Huebtel Co.
Scientific Glass App.
Tagliabue Mfg. Co.

COAL METERS
Bailey Meter Co.
Merrick Scale Mfg.
Northern Equipment

COIL TESTING EQUIPMENTS
See Testers, Coil

COLLIMATORS

Vertical
Berger & Sons
Kollmorgen Optical

COLOR ANALYZERS

Photoelectric
Bausch & Lomb
Fish-Schurman

Photoelectric
Akatos, Inc.
Coleman Elec. Co.
Continenetal Elec. Co.
Eimer & Amend
Fisher Scientific Co.
General Elec. Co.
Hays Labs.
Pfaltz & Bauer
Photobell Corp.
Rubicon Co.
United Cinephone

COLOR COMPARATORS

Photoelectric
Akatos, Inc.
Am. Inst. Co.
Central Scientific Co.
Continental Elec. Co.
Eimer & Amend
Ess Inst. Co.
Fish-Schurman
Fisher Scientific Co.
General Elec. Co.
General Radio Co.
Hays Labs.
Klett Mfg. Co.
Pfaltz & Bauer
Photobell Corp.
Research & Dev. Co.
Rubicon Co.
United Cinephone

Visual
Akatos, Inc.
Am. Inst. Co.
Barkon-Frink
Bausch & Lomb
Eimer & Amend
Everson Mfg. Co.
Fish-Schurman
Fisher Scientific Co.
Heilige, Inc.
Klett Mfg. Co.
LaMotte Chem. Prod. Co.
Munsell Color Co.
Tagliabue Mfg. Co.
Taylor & Co.
Carl Zeiss, Inc.

COLOR GRADERS
Barkon-Frink
Ess Inst. Co.
Industrial Electronics
Munsel Color Co.
United Cinephone

COLORIMETERS
Fisher Scientific Co.
Gaertner Scientific
Leitz, Inc.
Spencer Lens Co.

Photoelectric
Akatos, Inc.
Am. Inst. Co.
Central Scientific Co.
Coleman Elec. Co.
Continental Elec. Co.
Eimer & Amend
General Elec. Co.
Hays Labs.
Klett Mfg. Co.
Pfaltz & Bauer
Photobell Corp.
Research & Dev. Co.
United Cinephone

COLORIMETER TUBES
Arc Glass, Inc.
Barkon-Frink
Central Scientific Co.
Eimer & Amend
Fish-Schurman
Fisher Scientific Co.
Heilige, Inc.
Kimble Glass Co.
Klett Mfg. Co.

Visual
Akatos, Inc.
Bausch & Lomb

COLOR MATCHING OUTFITS
Eimer & Amend
Ess Inst. Co.
General Elec. Co.
Hays Labs.
Heilige, Inc.
Klett Mfg. Co.
Leitz, Inc.
Pfaltz & Bauer
Polarized Prod. Corp.
Tagliabue Mfg. Co.
Taylor & Co.
United Cinephone
Carl Zeiss, Inc.

COMBUSTION CONTROL EQUIPMENT
See Controllers, Automatic-Combustion

COMBUSTION

Indicators
Bacharach Indus. Inst.
Bailey Meter Co.
Brown Inst. Co.
Cambridge Inst. Co.
Defender Auto. Reg.
Dwyer Mfg. Co.
Engelhard, Inc.
Ess Inst. Co.
Hays Corp.
Mason-Neilan
Permutit Co.
Tagliabue Mfg. Co.
Uehling Inst.

Recorders
Am. Inst. Co.
Bacharach Ind. Inst.
Bailey Meter Co.
Bristol Co.
Brown Inst. Co.
Cambridge Inst. Co.
Defender Auto. Reg.
Engelhard, Inc.
Ess Inst. Co.
Hays Corp.
Mason-Neilan
Permutit Co.
Tagliabue Mfg. Co.
Uehling Inst.

COMMUNICATION MEASURING INSTRUMENTS
Cambridge Inst. Co.
Clough Brengle
Dejvri Co.
General Elec. Co.
General Radio Co.
Rawson Elec. Inst. Co.
R. C. A. Mfg. Co.
Roller-Smith Co.
Rubicon Co.
Sensitive Res. Inst. Co.
Shallcross Mfg. Co.

COMPARATORS
Gaertner Scientific
Precision Gage & Tool

Optical
Applied Research Labs.
Baldwin Southwark Corp.
Bausch & Lomb
Cambridge Instr. Co.
Central Scientific Co.
R. Y. Ferner Co.
Jones & Lamson Mach.
Mico Inst. Co.
G. S. Peters
Pfaltz & Bauer
Scherr Co.
Spencer Lens Co.
United Cinephone
Carl Zeiss, Inc.

CLOCK MOVEMENTS

Spring Driven for

RECORDING INSTRUMENTS

High Grade Jeweled Movements of Fine Quality Built for

LONG LIFE

CHELSEA CLOCK CO.
Boston, Mass.
ESTABLISHED 1886

(1) **CHARTS**
for
Recording Instrument Companies
Strip • Disc • Drum
Using Tested Papers

(2) **PAPERS**
for
Engineering-Laboratory Research Departments
Specialized and Sensitized
Printed and Plain
Rolls • Sheets • Discs

(3) Chart Production Company
274 Madison Avenue
New York City

TEMPERATURE CONTROL

If you have temperature control problems, send for your copy of the new Blue Book Part 4 which describes thermoregulators and relays for industry and science, including new units accurate to 0.1 F. Application diagrams are included.

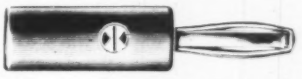
H-B INSTRUMENT CO.
2502 N. Broad St. Philadelphia, Pa.

NEW

1938 MODEL TITAN No. 176

Has six internal leaf springs to push out two heavy wiping contacts against jack. ¼" thread stud removable so plug will take special screws, first class nickel finish.

SEND FOR DATA ON OVER



100 types plugs, jacks, binding posts in 7 colors from peewee to 11mm sizes.

Universal Test Kit. Contains fourteen pieces, one each Nos. 25 and 30, two each Nos. 14, 28, 35, 26, 28, 42. All pieces are supplied in Red and Black for Positive and Negative respectively, except Nos. 30 and 25 which are yellow, and the clip No. 35 is highly nickeled polished.

Kit No. 125 — $1.05

BANK INTERAIR PRODS

WOODSIDE NEW YORK
Tel. NE. 95252

Foxboro makes a comprehensive line of Air- and Electric-Operated Controllers for temperature, pressure, flow, liquid level and humidity. The control systems include every type from the simple Open-and-Shut Control to the Foxboro Stabilog Control System—providing the ideal type of control for every job.

For information concerning the entire line of Foxboro Instruments and Controllers refer to "Sweet's Catalog", or write for a copy of Bulletin No. 199-2. The Foxboro Company, 46 Neponset Avenue, Foxboro, Mass., U. S. A. Branch offices in 25 Principal Cities.

COMPASSES

Aircraft
Fish-Schurman
General Elec. Co.
Kollsman Inst. Co.
Pioneer Inst. Co.
Weston Elec. Inst. Corp.

Automobile
U. S. Gauge Co.

Azimuth
Wm. Ainsworth & Sons
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Warren-Knight Co.

Beam
Eugene Dietzen Co.
Keuffel & Esser Co.
Soltmann, Inc.
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Wade Inst. Co.
F. Weber & Co.

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Taylor Inst. Cos.
David White Co.

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Baker Compass Co.
Bendix Marine Prod.
John Bliss & Co.
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T. S. & J. D. Negus
Ritchie & Sons

Photoelectric
Continental Elec. Co.
Pfaltz & Bauer
United Cinephone

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Ship
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Geophysical Inst. Co.
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CONCENTRATION RECORDERS
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Rubicon Co.

CONDENSER (ELECTRIC)
See Capacitors

CONDENSER LEAKAGE Indicators
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Clough-Brengle
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Fischer & Porter
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Leeds & Northrup
Potter Co.
Precision Therm.
Superme Inst. Corp.
Triumph Mfg. Co.
Weston Elec. Inst. Co.

Recorders
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Esterline-Angus
Fischer & Porter
Leeds & Northrup

CONDENSER (OPTICAL) Abbe
Bausch & Lomb
R. Fuess, Inc.
Leitz, Inc.
Pfaltz & Bauer
Research & Dev. Co.
Carl Zeiss, Inc.

CONDENSER Achromatic
Bausch & Lomb
Fish-Schurman
R. Fuess, Inc.
Leitz, Inc.
Pfaltz & Bauer
Research & Dev. Co.
Carl Zeiss, Inc.

Apochromatic
Leitz, Inc.
Pfaltz & Bauer
Research & Dev. Co.
Carl Zeiss, Inc.

Bull's Eye
Bausch & Lomb
Fish-Schurman
Carl Zeiss, Inc.

Cardioid
Bausch & Lomb
Leitz, Inc.
Pfaltz & Bauer
Research & Dev. Co.
Carl Zeiss, Inc.

Glass
Ace Glass Inc.
Bausch & Lomb
Fish-Schurman
R. Fuess, Inc.
Specialty Glass Co.
Carl Zeiss, Inc.

Paraboloid
Bausch & Lomb
Fish-Schurman
R. Fuess, Inc.
Carl Zeiss, Inc.

CONDENSER TESTERS
See Testers, Condenser

CONDUCTIVITY METERS
Biddle Co.
Cambridge Inst. Co.
Central Scientific Co.
Colemgh Elec. Co.
General Elec. Co.
Leeds & Northrup
Pfaltz & Bauer
Roller-Smith Co.
Rubicon Co.
Shalleross Mfg. Co.
Solar Mfg. Corp.

CONES Pyrometric
Accurate Pyrometric Cone
Fish-Schurman
Edward Orton, Jr.

Seger
Fish-Schurman

Slump
Am. Inst. Co.
Humboldt Mfg. Co.
Precision Sc. Co.

CONNECTORS Posts, Jacks, Plugs, Clips
Bank InterAir Products

CONSISTENCY REGULATORS, Pulp & Paper
See Controllers, Automatic, Consistency

CONSTANT SPEED & Frequency Sets
General Elec. Co.
Leeds & Northrup
United Cinephone

CONTOUR MEASURING PROJECTORS
Scherr Co.
Carl Zeiss, Inc.

CONTROL DRIVES
See Servo-Motors

CONTROLLERS, AUTOMATIC
See also object of Measurement and Control

Ammonia
See Ammonia Control Equipment

Beater
Foxboro Co.
Mason-Neilan

"Fulscope" Indicating Temperature and Pressure Controllers

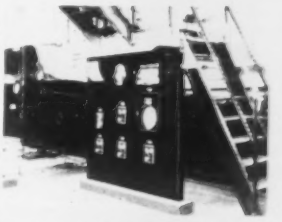
IDEAL for many applications where temperatures and pressures must be kept under exact, automatic control, but chart-records are not necessary. Like all other Taylor "Fulscope" Controllers, these instruments are equipped with the "Universal Sensitivity Adjuster," an exclusive Taylor development. Available with or without "direct-set" feature. This feature is advantageous on applications where frequent control-point adjustments are required, since adjusting knob may be turned directly to desired point on the calibrated scale.

When mercury-actuated type temperature controller is used with mercury tube system, Taylor Accuratus Tubing compensates for temperature fluctuations between bulb and instrument case. Error in recording bulb temperature is thus avoided.

For complete details, write for catalog to

TAYLOR INSTRUMENT COMPANIES
Rochester, N. Y. Toronto, Canada

Taylor
INSTRUMENTS



BAILEY METER *Combustion* CONTROL

● Bailey Meter Automatic Combustion Control of boilers results in substantial saving in fuel; increased boiler capacity; reduction of boiler and furnace maintenance; more time for operators to devote to general station maintenance; and improvement in the general character of service.

Bailey Meter Control makes possible the everyday operation of boilers at test efficiencies because it is a complete combustion control system which (1) automatically maintains steam pressure by supplying fuel and air simultaneously to boilers in accordance with changes in steam demand, (2) automatically maintains most economical fuel-air ratio by incorporating the Bailey Boiler Meter as an integral part of the system, (3) automatically maintains the desired furnace draft, and (4) automatically distributes load among boilers so that each unit carries its share.

This sturdy inexpensive air-operated control system has been applied to all sizes and types of boilers ranging from 200 h.p. upward. It is applicable to all fuels and all methods of firing.

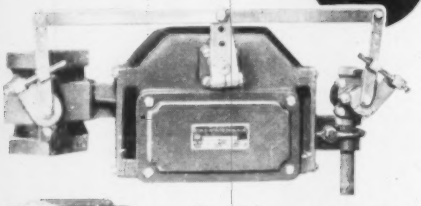
For further information consult Sweet's Engineering Catalogs or write for bulletin No. 102-A.

BAILEY METER COMPANY
1041 IVANHOE ROAD · CLEVELAND, O.
Bailey Meter Company Ltd., Montreal, Canada

MOTOR-OPERATED CONTROLLERS

... by atc

For Automatic control of Temperature · Pressure · Level · Flow



For Automatic positioning of VALVES — air, gas, oil, steam, water or DAMPERS.

ATC provides a line of Motor-Operated Controllers so broad in types and models as to permit accurate selection for specific needs. The desired result is thus produced without recourse to special equipment. Extremely exacting requirements can be met by standard ATC devices, combining the accuracy and ruggedness expected from the pioneer manufacturers in the field.

REPRESENTATIVES IN PRINCIPAL CITIES

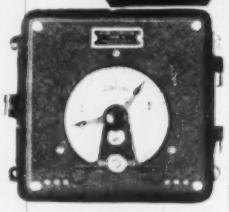
May we send Bulletins G-9 and G-10 which offer condensed descriptions of the various ATC Controllers?

AUTOMATIC TEMPERATURE CONTROL CO.
34 E. Logan St. Philadelphia, Pa.

Automatic TIMING

... by atc

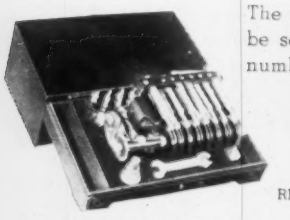
Dependable Control Over Process Periods or Process Actions



An ATC Dial Timer available in 40 standard adjustable types.

Accurate control of processes and operations on the basis of TIME, is a major business with ATC. Installations, numbered in the thousands, are daily paying their way with most reliable — therefore most economical — performance.

Standard models will start, stop or repeat operations on one to forty load circuits. Adjustment can be exactly what is needed, down to a split second. The total cycle can be seconds or any number of hours.



An 8-circuit Cam Timer used to control eight steps of a process

Send for BULLETIN T-20

REPRESENTATIVES IN PRINCIPAL CITIES

AUTOMATIC TEMPERATURE CONTROL CO.
34 E. Logan St. Philadelphia, Pa.

CONTROLLERS, AUTOMATIC

Boiler Feed

Askania Reg. Co.
Atlas Valve Co.
Bailey Meter Co.
Fisher Governor Co.
Foster Engg. Co.
Foxboro Co.
Hagan Corp.
Hays Corp.
Mason-Neilan
McDonnell & Miller
Minn.-Honeywell
Northern Equipment
Penn Electric Switch Co.
Ploutf Co.
Republic Flow Meters
C. E. Squires Co.
Vaughn-G. E. Witt Co.
Watts Regulator Co.
Wheelco Inst. Co.
Wilgus Mfg. Co.

Boiler Water Concentration

Coleman Elec. Co.
Heinzey Co.
George Ruhfel Co.

Chlorine

Askania Reg. Co.
Fischer & Porter
Hoke Inc.
Proportioneers, Inc.
Wallace & Tiernan

Combustion

Atlas Valve Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Denver Fire Clays
Julian P. Este Co.
Dickson Co.
Hagan Corp.
Hays Corp.
Leeds & Northrup
Mason-Neilan
Minn.-Honeywell
National Airoil Burner
Paragon Elec. Co.
Penn Electric Switch
Perfex Corp.
Republic Flow Meters
Wheelco Inst. Co.
Wilgus Mfg. Co.

AUTOMATIC CONTROLLERS,

Condensation

Bailey Meter Co.
Fritz & Sons
Minn.-Honeywell
Northern Equip. Co.
Taplitabue Mfg. Co.
Taylor Inst. Cos.

Condenser Leakage

Esterline-Angus
Fischer & Porter

Consistency

Area Regulators
Esterline-Angus
Foxboro Co.
Mason-Neilan
Minn. & Snyder Sons
Northern Equip. Co.

Current

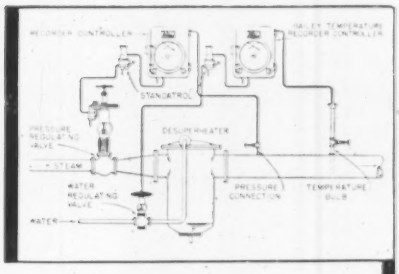
See Regulators

Cycle

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brown Inst. Co.
Electric Switch Corp.
Foxboro Co.
General Controls Co.
Industrial Inst. Co.
Mason-Neilan
Taplitabue Mfg. Co.
Taylor Inst. Cos.
Vickers Inc.

Damper

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Beck Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Julian P. Este Co.
Foster Engg. Co.
General Controls Co.
Hagan Corp.
Hays Corp.
Leeds & Northrup
Marsh Corp.
Mason-Neilan
Ploutf Co.
Powers Reg. Co.
Republic Flow Meters
Taplitabue Mfg. Co.
Taylor Inst. Cos.
Vaughn-G. E. Witt Co.
Watts Regulator Co.



DESUPERHEATING & PRESSURE REDUCING CONTROL

● Bailey Meter Control of desuperheating and pressure reducing incorporates standard Bailey Recorder-Controllers for both pressure and temperature, as well as a special Bailey Reducing Valve equipped with valve positioner and air cooled packing gland.

The control system is air-operated and is arranged to maintain the desired final steam temperature by controlling the quantity of water fed to a cartridge type desuperheater. This temperature is measured by a sensitive bare bulb temperature recorder-controller with the temperature bulb located at the ● outlet of the desuperheater.

BAILEY METER COMPANY
1041 IVANHOE ROAD · CLEVELAND, O.
Bailey Meter Company Ltd., Montreal, Canada

NTROLLERS, UTOMATIC

Desuperheat

Askania Reg. Co.
Bailey Meter Co.
Leeds & Northrup
Mason-Neilan
Taylor Inst. Cos.

Draft

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Defender Auto. Reg.
Foxboro Co.
Hagan Corp.
Hays Corp.
Leeds & Northrup
Mason-Neilan
Republic Flow Meters
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Feed Water

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Cochrane Corp.
Defender Auto. Reg.
Foxboro Co.
Hagan Corp.
Mason-Neilan
Republic Flow Meters
Wheelco Inst. Co.
Wilcox Mfg. Co.

Filter Rate

Cochrane Corp.
Taylor Inst. Cos.

Float

Bailey Meter Co.
Bristol Co.
Cochrane Corp.
Foxboro Co.
Klipfel Mfg. Co.
Mason-Neilan
Powers Reg. Co.
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Flow Proportioning

Am. Meter Co.
Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Fischer & Porter
Foxboro Co.
Hagan Corp.
Klipfel Mfg. Co.
Mason-Neilan
Republic Flow Meters
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Fluid Proportioning

Am. Meter Co.
Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Fischer & Porter
Hagan Corp.
Klipfel Mfg. Co.
Mason-Neilan
Republic Flow Meters
Taghlabue Mfg. Co.
Taylor Inst. Cos.

CONTROLLERS, AUTOMATIC

Frequency

See Regulators

Furnace

Area Regulators
Askania Reg. Co.
Automatic Temp. Control
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Burling Inst. Co.
Friez & Sons
Claud S. Gordon Co.
Hays Corp.
Leeds & Northrup
Mason-Neilan
Taghlabue Mfg. Co.
Thwing-Albert
Wheelco Inst. Co.

Gravity

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Humidity

Area Regulators
Atlas Valve Co.
Bristol Co.
Brown Inst. Co.
Foxboro Co.
Friez & Sons
H-B Inst. Co.
Mason-Neilan
Powers Reg. Co.
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Humidity & Temperature

Am. Inst. Co.
Area Regulators
Atlas Valve Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Foxboro Co.
Friez & Sons
H-B Inst. Co.
Mason-Neilan
Powers Reg. Co.
Taghlabue Mfg. Co.

Lighting

Leeds & Northrup
General Elec. Co.
Pfaltz & Bauer
Ward Leonard
Weston Elec. Inst. Corp.

Liquid Level

Am. Inst. Co.
Am. Meter Co.
Area Regulators
Askania Reg. Co.
Automatic Temp. Control
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Builders Iron Fdry.
B. O. Bushnell
Cochrane Corp.

Bailey FEED WATER Control

● Bailey Meter Company offers three distinct feed water control systems. They are (1) the Thermo-hydraulic Feed Water Regulator which is suitable for the majority of *small* boilers operating at relatively low pressures. This regulator operates from water level alone and is provided with a fully balanced tight seating V-port regulating valve designed to give a straight line characteristic. It offers the advantages of low installation cost, removable valve parts and independence of valve location.

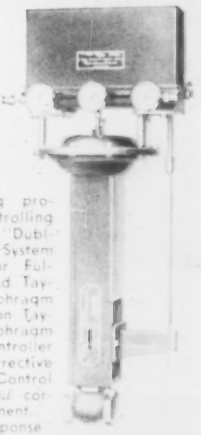
(2) The Single-Element air-operated feed water control system is recommended for installations on which smooth regulation of feed water flow is desired, and a wide regulating range cannot be used. This system is controlled by water level alone as measured by a Bailey Boiler Drum Water Level Recorder.

(3) Bailey Three-Element feed water control is recommended for high capacity low water storage boilers operating at high pressures or for boilers operating at medium pressures with violent load fluctuations. This system is based on actual measurement of water flow to the boiler, steam flow from the boiler and water level within the boiler, and is adjusted primarily to control the rate of water flow to the boiler so that it equals the rate of steam flow from the boiler.

For detailed information consult Sweet's Engineering Catalogs or request bulletin ● No. 183.

BAILEY METER COMPANY
1041 IVANHOE ROAD - CLEVELAND, O.
Bailey Meter Company Ltd., Montreal, Canada

FULSCOPE "DUBL-RESPONSE" CONTROL



For use on extremely difficult installations to insure straight-line control in spite of varying load changes, whether such load changes be an increase or decrease in the flow, temperature or composition of the material being processed, or the controlling medium. Complete "Dubl-Response" Control System composed of Taylor Fulscope Controller and Taylor "Evenaction" Diaphragm trol Unit mounted on Taylor Even-action Diaphragm Valve. Fulscope Controller provides first corrective valve movement. Control Unit provides *second* corrective valve movement.

Fulscope "Dubl-Response" Control is widely adaptable, simple in design and construction. All parts built for long, trouble-free service under severest conditions.

For descriptive catalog, write to

TAYLOR INSTRUMENT COMPANIES
Rochester, N. Y. Toronto, Canada

Taylor
INSTRUMENTS

CONTROLLERS, AUTOMATIC

Liquid Level

Dickson Co.
Fisher Governor
Foster Engg. Co.
Foxboro Co.
General Elec. Co.
Hagan Corp.
International Filter
Johnson Service Co.
Klipfel Mfg. Co.
Liquidometer Elec. Co.
Mason-Neilan
Mercoid Regulator
Minn. Honeywell
Natural Gas Equip.
Northern Equip.
Penn Electric Switch
Pfaff Co.
Powers Reg. Co.
Robertson Gauge Cabinet
Republic Flow Meters
Taghlabue Mfg. Co.
Taylor Inst. Cos.
Wahs Regulator
Wheelco Inst. Co.
Wilcox Mfg. Co.

Load

See Regulators

Moisture

Area Regulators
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Foxboro Co.
Mason-Neilan
Powers Reg. Co.
Taghlabue Mfg. Co.
Taylor Inst. Cos.

Phase

See Regulators

Phosphate Feed

Cochrane Corp.
Hagan Corp.
International Filter
Northern Equip.
Proportioners, Inc.

Power Factor

See Regulators

COMPLETE INSTRUMENTATION *for* INDUSTRIAL PROCESSES

CONTROLLERS for temperature, pressure, absolute pressure, rate of flow and liquid level. Air-operated potentiometer controllers. Exclusive features resulting in unexcelled performance.

RECORDERS of temperature, pressure, flow level, motion and absolute pressure.

INDICATORS of temperature, pressure, flow and level.

TRANSMISSION SYSTEMS, pneumatic type with exceptionally fast response. Electric signalling systems.

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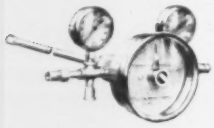

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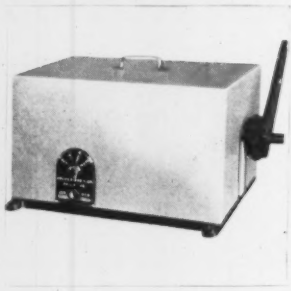

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Perfex Corp.
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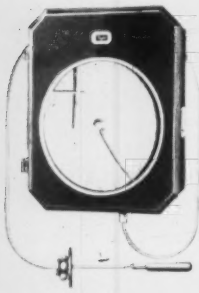

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Blast
American Gas Furnace
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Bailey Meter Co.
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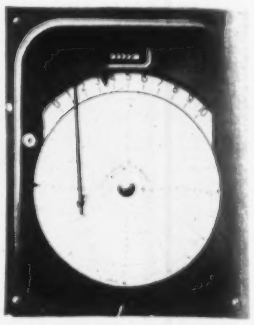
Distingished for extreme accuracy and high quality, Cochrane flow Meters are reliable guides for compiling records of consumption, intake, output and variation in the rate of flow of steam, gases, water and other liquids. The Electric Model utilizes the galvanometer null principle.



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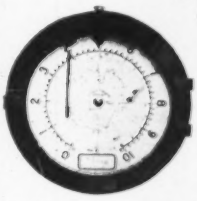

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The sensitive galvanometer detects the slightest change in rate of fluid flow, unaffected by friction or variations in voltage or frequency. Can be installed any distance from pipe line. The mechanical model develops an extremely high torque, is accurate in design, simple and rugged in construction.

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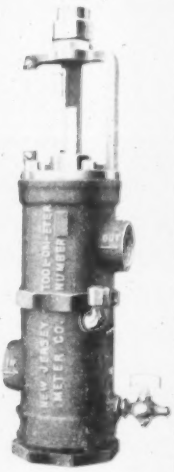

Measure the flow of Compressed Air to any process or tool. Guide the maintenance of pneumatic equipment in effective working condition.

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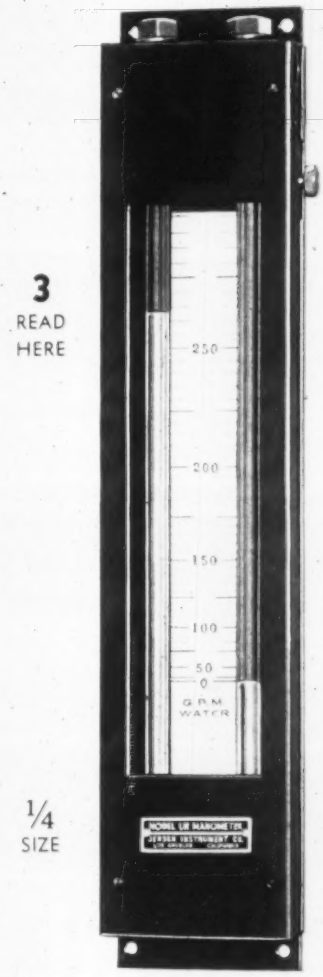

Unique Revolving Scale Automatic Zero Check

THERE is satisfaction in using a Jensen Flow Gage. A unique revolving scale converts the old reliable scientific U-tube into a versatile plant instrument. One—two—three (see illustration)—it is just that simple to automatically check zero and measure a fully visible differential head. This assures an infallible reading of the g.p.m. water, lbs. hr. steam, bbls. day oil, or the like passing through an orifice, venturi, or nozzle. Furthermore, zero can be set on either manometer leg . . . piping connections are optional . . . counterflows, as in backwashing of water filters, register automatically in reverse. No shut-downs to check the gage, none to check zero, and none to reverse flows.

Then consider the quality reflected by high pressure Pyrex tubes packed-off in precision machined bar steel. This is truly a master Flow Gage.

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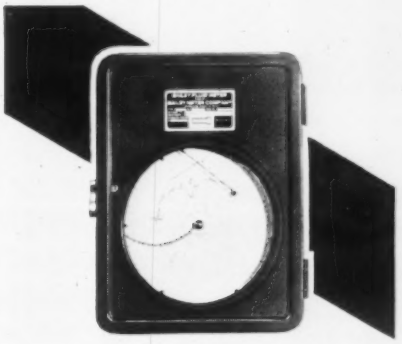

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For STEAM · LIQUIDS · GASES

● Bailey Fluid Meters are designed to indicate, record and integrate the flow of steam, liquids, or gases under practically any pressure or temperature condition.

A great variety of indicating, recording and integrating combinations are available for use with four distinct types of flow mechanisms.

This large variety of possible combinations enables the flow meter engineer to specify equipment which is pre-eminently suited to any flow measuring application.

When it is desired to place indicators, recorders and integrators at a considerable distance from the primary element, Bailey Synchro-Meters are available to provide electric transmission.

For detailed information consult Sweet's Engineering Catalogs or request a copy of bulletin No. 301.

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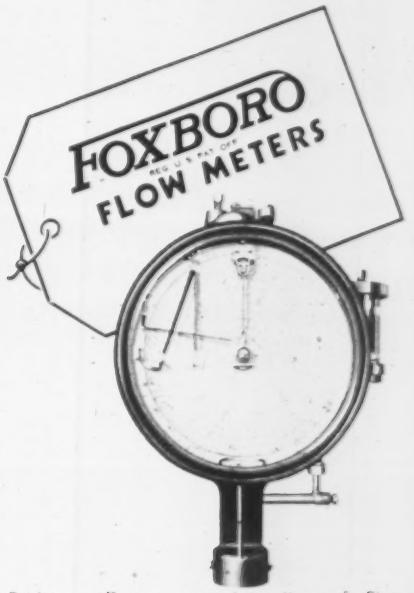
Bailey Meter Company Ltd., Montreal, Canada



Foxboro offers a complete line of Flow Meters for measuring steam, gas, air, oil, water, acids and other fluids. These meters are of the orifice type—simple in design, powerful with a straight-line motion that assures permanent calibration and long life. They can be furnished with direct-reading integrator to give total flow. Recorders may also be equipped with pressure, temperature and integrator pens.

For complete information write for Bulletin No. 200-2 and Bulletin 692. The Foxboro Company, 46 Neponset Avenue, Foxboro, Mass., U. S. A. Branch offices in 25 Principal Cities.

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CONTROL mechanism, means of adjustment, and performance characteristics identical with those of "Fulscope" temperature and pressure controllers.

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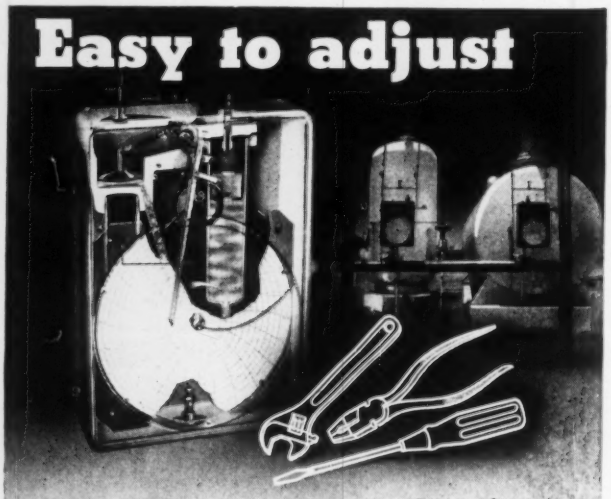

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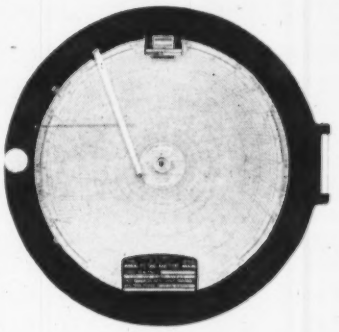

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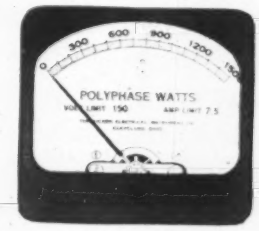

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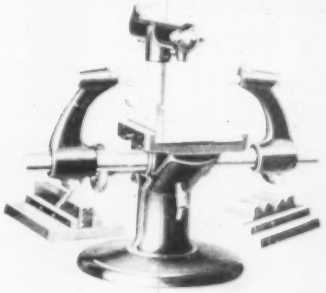

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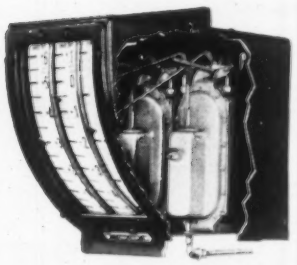

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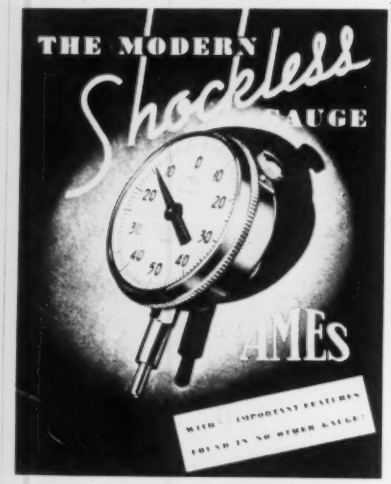

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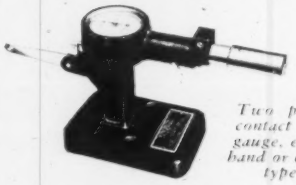

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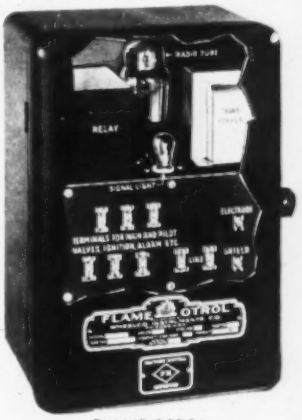

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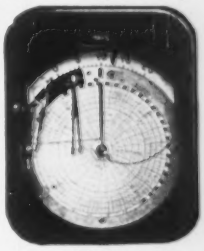

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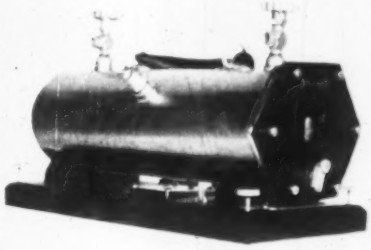

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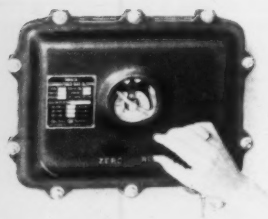

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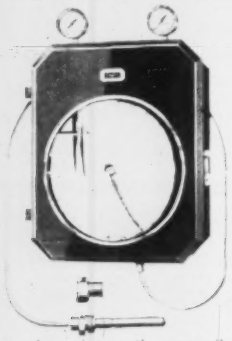

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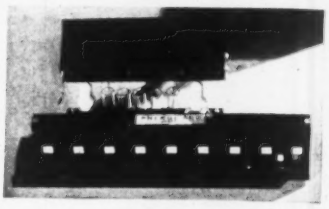

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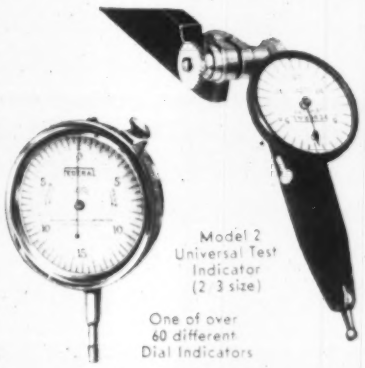

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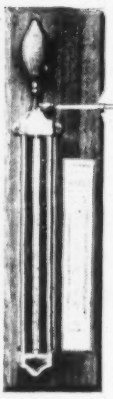
(Continued on page 32)



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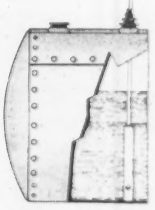

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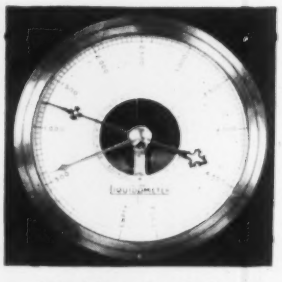

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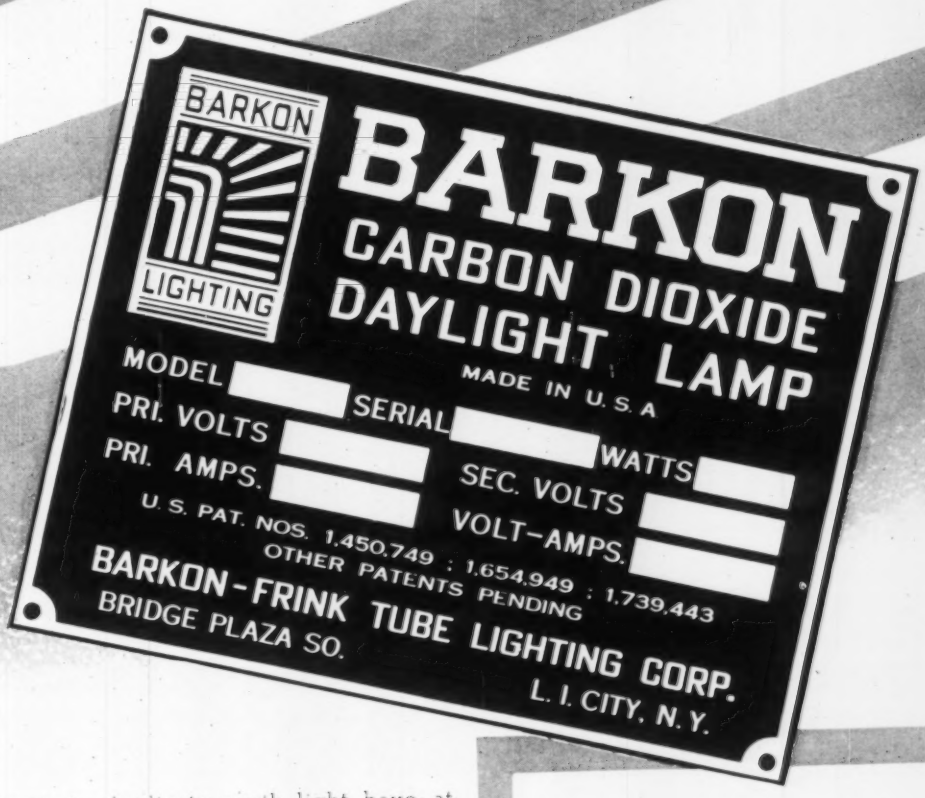

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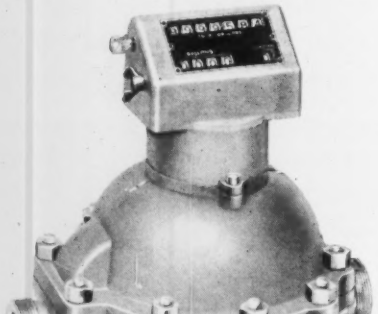

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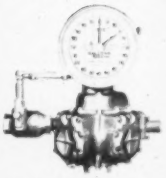

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(Continued on page 361)

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DIFFERENTIAL pressure and static pressure types.

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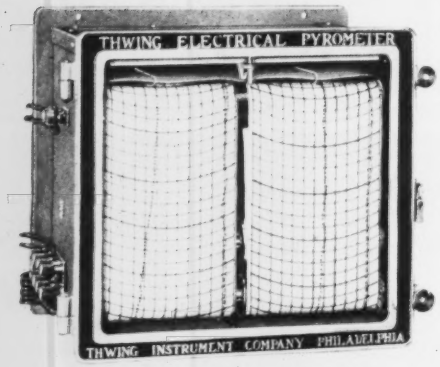

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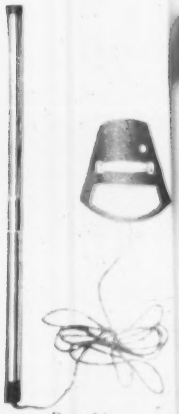

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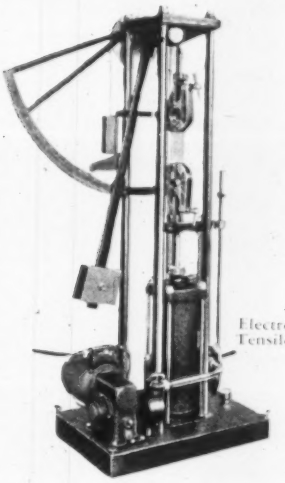

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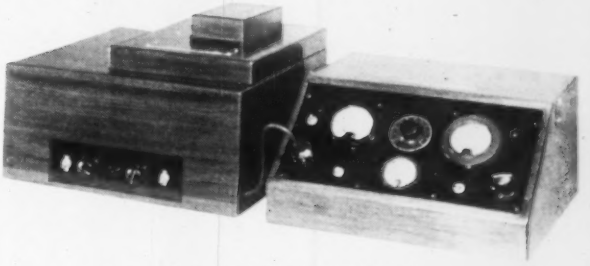
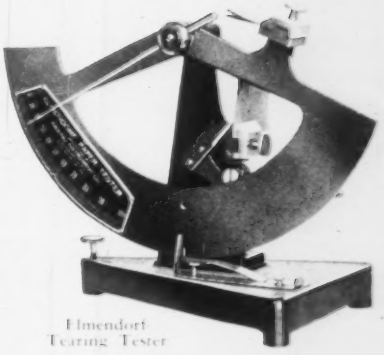


Formation Tester for Paper



Elmendorf Tearing Tester

For the Paper Industry

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The illustrations on this page show a few of the better known instruments produced by Thwing-Albert Instrument Company that have contributed immensely to the technical advancement in the Pulp and Paper Industry during the last two decades.

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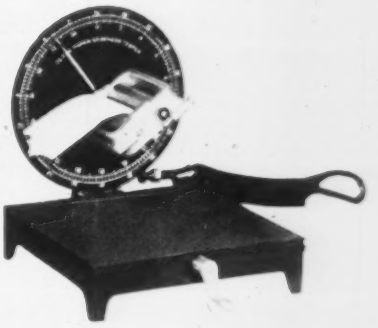
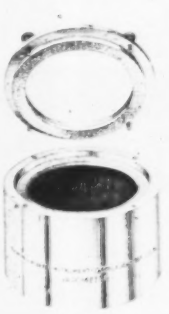
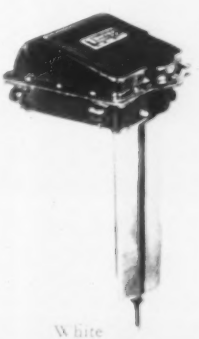


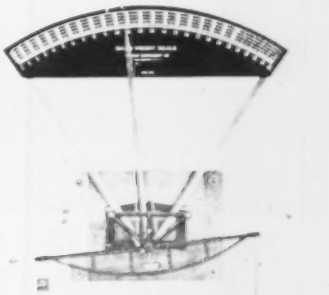
Stiffness-Softness Tester for Paper



Vapometer Vapor Transmission Tester



White Water Sampler



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Acid

See Acidimeters

Air

See Air Meters

Ampere Hour

See Ampere Hour Meters

Coal

See Coal Meters

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See Conductivity Meters

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See Sound Level Meters

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Flow

See Flowmeters

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See Counters, Footage

Foot-candle

See Foot Candle Meters

Frequency

See Frequency Meters

Gas

See Gas Meters

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See Meters, Liquid

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Index

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See Meters, Liquid

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See Pitot Tube Meters

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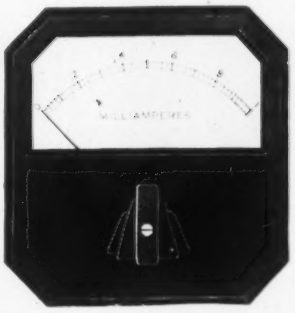

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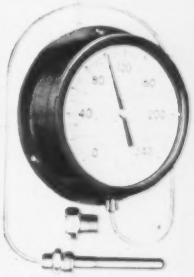

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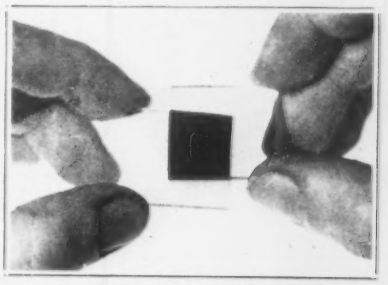

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with LARGE Aperture PHOTOELASTIC POLARISCOPE

Photograph of the apparatus with quarter wave plates swung out of position

The illustration shows an instrument of 4¼ aperture mounted on an optical bench one meter long. The four units are:

The Light Source, consisting of illuminant, filter for 5461 A (with mercury light), condenser and collimating lens, within a single compact unit.

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The Analyzer and quarter wave plate similar to Polarizer.

The Projection system.

The polarizer and analyzer are set in rotating mounts with scale reading for 180°; the quarter wave plates are in rotating mounts with scale reading for 90°.

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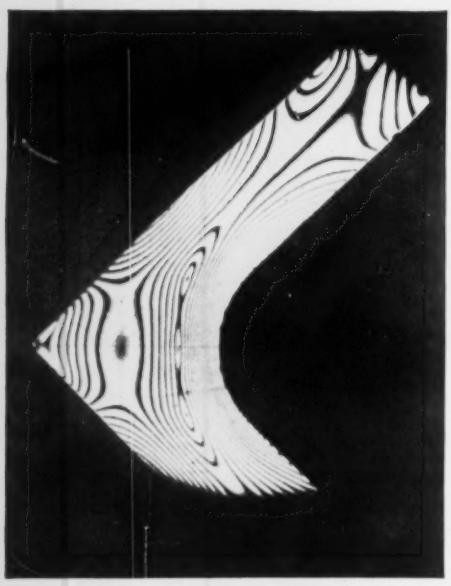

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Consol. Ashcroft
Fisher Governor
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Hagan Corp.
Hydraulic Press Co.
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Refrigerating Spec.
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Foxboro Co.
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Claud S. Gordon Co.
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Hays Corp.
Mason-Neilan
Pfaudt Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Viking Inst. Co.

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Bristol Co.
Brown Inst. Co.
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Brown Inst. Co.
Consol. Ashcroft
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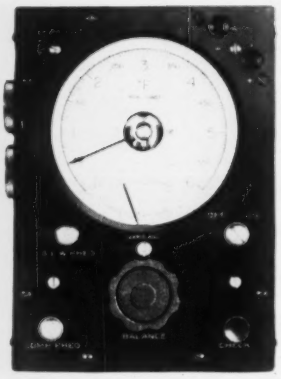

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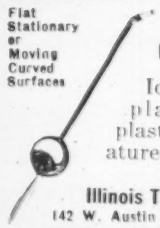

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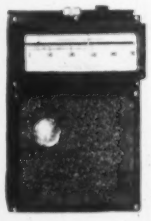

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Pitts. Equitable Meter
Ploutt Co.
Republic Flow Meters
Tagliabue Mfg. Co.

Condensation

Askania Reg. Co.
Bailey Meter Co.
Cash Co.
Julian D'Este
Friez & Sons
Mason-Neilan
Northern Equip.
Tagliabue Mfg. Co.

Consistency (Paper & Pulp)

Area Regulators
Foxboro Co.
Mason-Neilan
Northern Equip.
United Cinephoto

REGULATORS AUTOMATIC

Cooler

Cash Co.
Clifford Mfg. Co.
General Elec. Co.
Mason-Neilan
Refrigerating Spec.
Tagliabue Mfg. Co.

Current

Esterline Angus
General Elec. Co.
Raytheon Mfg. Co.
Roller-Smith Co.

Draft

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Defender Auto. Reg.
Denver Fire Clay
Julian D'Este
Foxboro Co.
Gen. Controls Co.
Hagan Corp.
Hays Corp.
Leeds & Northrup
Mason-Neilan
Minn. Honeywell
Penn. Electric Switch
Ploutt Co.
Republic Flow Meters
Tagliabue Mfg. Co.
Wilgus Mfg. Co.

Drying Chamber

Bristol Co.
Julian D'Este
Foxboro Co.
Friez & Sons
Mason-Neilan
Powers Reg. Co.
Tagliabue Mfg. Co.
United Cinephoto

Electrical

Beck Co.
Booker & Co.
Cutler-Hammer, Inc.
Esterline Angus
Foxboro Co.
Friez & Sons
General Control Co.
General Elec. Co.
Marsh Corp.
Micro Switch Corp.
Raytheon Mfg. Co.
Refrigerating Spec.
Roller-Smith Co.
Struthers-Dunn
Tagliabue Mfg. Co.
United Cinephoto
Ward Leonard

Feed Water

Askania Reg. Co.
Bailey Meter Co.
Bender Warrick
Brown Inst. Co.
Defender Auto. Reg.
Fisher Governor
Foxboro Co.
Hagan Corp.
Mason-Neilan
Mercoid Regulator
Northern Equip.
Penn Electric Switch
Ploutt Co.
Republic Flow Meters
Tagliabue Mfg. Co.
Vaughn G. E. Wile Co.
Wayne Regulator Co.
Wilgus Mfg. Co.

Flow

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bender Warrick
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Builders Iron Fdry.
Cash Co.
Consol. Asbestos
Davis Reg. Co.
Fischer & Porter
Foster Engg.
Foxboro Co.
Hagan Corp.
International Filter
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Northern Equip.
Republic Flow Meters
Simplex Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vickers, Inc.
Wilgus Mfg. Co.

Flow Proportioning

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.

REGULATORS AUTOMATIC

Flow Proportioning

Brown Inst. Co.
Builders Iron Fdry.
Connelly Co.
Fischer & Porter
Foxboro Co.
Hagan Corp.
Hoffman Specialty
Honeywell Co.
International Filter
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Republic Flow Meters
Simplex Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
United Cinephoto

Fluid Proportioning

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Fischer & Porter
Hagan Corp.
Hoffman Specialty
Honeywell Co.
International Filter
Klipfel Mfg. Co.
Lammert & Mann
Mason-Neilan
Mercoid Regulator
Proportioners Inc.
Republic Flow Meters
Simplex Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
United Cinephoto

Furnace

Area Regulators
Askania Reg. Co.
Automatic Prod. Co.
Bailey Meter Co.
Barber-Colman
Beck Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Burling Inst. Co.
Cash Co.
Connelly Co.
Defender Auto. Reg.
Detroit Lubricator
Dickson Co.
Friez & Sons
Gen. Controls Co.
General Elec. Co.
Hagan Corp.
Hays Corp.
Leeds & Northrup
Mason-Neilan
Minn. Honeywell
Payne Furnace
Perfex Corp.
Penn. Electric Switch
Pitts. Equitable Meter
Republic Flow Meters
Tagliabue Mfg. Co.
Wilgus Mfg. Co.

Gas

Area Regulator
Am. Meter Co.
Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bastian Blessing Co.
Bellfield Co.
Bristol Co.
Brooks Engg. Co.
Brown Inst. Co.
Cash Co.
Connelly Co.
Cutler Hammer, Inc.
Julian D'Este
Detroit Lubricator
Fisher Governor
Foster Engg.
Foxboro Co.
Gen. Controls Co.
Hagan Corp.
Hays Corp.
Klipfel Mfg. Co.
Mason-Neilan
Minn. Honeywell
Partlow Corp.
Penn. Electric
Pitts. Equitable Meter
Powers Reg. Co.
Republic Flow Meters
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Union Carbide Co.
United Cinephoto
Vaughn G. E. Wile Co.
Wilgus Mfg. Co.

Heat

Am. Inst. Co.
Area Regulators
Askania Reg. Co.
Automatic Prod. Co.
Bailey Meter Co.
Barber-Colman
Beck Co.
Bristol Co.
Brooks Engg. Co.
Brown Inst. Co.
Burling Inst. Co.
Clifford Mfg. Co.

REGULATORS AUTOMATIC

Heat

Consol. Asbestos
Cooper-Hew Thermometer
Detroit Lubricator
Dickson Co.
Foxboro Co.
Friez & Sons
Gen. Controls Co.
H-B Inst. Co.
Hagan Corp.
Hoffman Specialty
Mason-Neilan
Minn. Honeywell
Partlow Corp.
Penn. Electric Switch
Perfex Corp.
Powers Reg. Co.
Struthers-Dunn
Tagliabue Mfg. Co.
Taylor Inst. Cos.

Humidity

Am. Inst. Co.
Area Regulators
Automatic Prod. Co.
Barber-Colman
Beck Co.
Bristol Co.
Brooke Engg. Co.
Consol. Asbestos
Detroit Lubricator
Foxboro Co.
Friez & Sons
H-B Inst. Co.
Hoffman Specialty
Mason-Neilan
Minn. Honeywell
Perfex Corp.
Penn Electric Switch
Powers Reg. Co.
Tagliabue Mfg. Co.

Hydraulic Pressure

Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Brooke Engg.
Cash Co.
Julian D'Este
Fisher Governor
Foster Engg.
Foxboro Co.
Hagan Corp.
Hydraulic Press
International Filter
Johnson Service
Klipfel Mfg. Co.
Mason-Neilan
Northern Equip.
Ploutt Co.
Tagliabue Mfg. Co.
Vickers Inc.
Wilgus Mfg. Co.

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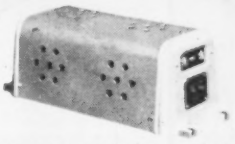

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OUTPUT—115 volts ± 1% at all loads within ratings
STOCK MODELS—60, 120, 250, 500 watts

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WALTHAM, MASS.

REGULATORS AUTOMATIC

Liquid Level

Am. Inst. Co.
Am. Meter Co.
Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Bellfield Co.
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Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Builders Iron Fdry.
Consol. Ashcroft
Cutler-Hammer
Davis Reg. Co.
Julian D'Este
Detroit Lubricator
Dickson Co.
Fisher Governor
Foster Engg.
Foxboro Co.
Gen. Controls
General Elec. Co.
Hagan Corp.
International Filter
Johnson Service
Klipfel Mfg. Co.
Liquid Level Con.
Liquidometer Co.
Mason-Neilan
Mercon Regulator
Minn. Honeywell
Northern Equip.
Penn Electric Switch
Plouff Co.
Powers Reg. Co.
Reliance Gauge Column
Republic Flow Meters
Simplex Co.
Square D Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
United Cinephone
Watts Regulator
Wilgus Mfg. Co.

Oil Feed

Area Regulators
Askania Reg.
Atlas Valve
Bellfield Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Julian D'Este
Fischer & Porter
Foster Engg.
Foxboro Co.
Hagan Corp.
Lammert & Mann
Mason-Neilan
National Airoil
Northern Equip.
Perfex Corp.
Plouff Co.
Republic Flow Meters
Taylor Inst. Cos.
United Cinephone
Vaughn G. E. Witt
Vickers Inc.

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Cornell Dubilier
Electric C. & M.
Esterline-Angus
General Elec. Co.
United Cinephone

Pressure

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Area Regulators
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Atlas Valve
Bailey Meter Co.
Bastian Blessing Co.
Bellfield Co.
Bookel & Co.
Boylston Steam Specialty
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Clifford Mfg. Co.
Connelly Co.
Consol. Ashcroft
Cutler-Hammer
Davis Reg. Co.
Defender Auto. Reg.
Julian D'Este
Detroit Lubricator
Esterline-Angus
Fisher Governor
Foster Engg.
Foxboro Co.
Hagan Corp.
Hays Corp.
Hoke Inc.
Hydraulic Press
Klipfel Mfg. Co.
Lammert & Mann
Liquid Level Con.
Mason-Neilan
Mercon Regulator
Minn. Honeywell
Natural Gas Equip.
Northern Equip.
Penn Electric Switch
Perfex Corp.
Pitts. Equitable Meter
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Sc. Inst. Co.
Spencer Thermostat
Square D Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.

REGULATORS AUTOMATIC

Pressure

United Cinephone
Vaughn G. E. Witt
Vickers Inc.
Viking Inst. Co.
Ward Leonard
Watts Regulator
Wilgus Mfg. Co.

Pump

Area Regulators
Askania Reg. Co.
Atlas Valve
Bailey Meter Co.
Bellfield Co.
Bender Warrick
Boylston Steam Regulator
Brown Inst. Co.
Davis Reg. Co.
Defender Auto. Reg.
Julian D'Este
Electric C & M
Fisher Governor
Foster Engg.
Hagan Corp.
Hydraulic Press
Klipfel Mfg. Co.
Liquid Level Con.
Mason-Neilan
Mercon Regulator
Northern Equip.
Penn Electric Switch
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Square D Co.
Tagliabue Mfg. Co.
Vaughn G. E. Witt
Watts Regulator
Wilgus Mfg. Co.

Refrigeration

Automatic Prod. Co.
Brown Inst. Co.
Clifford Mfg. Co.
Cutler-Hammer Inc.
Julian D'Este
Foster Engg.
Friez & Sons
Gen. Controls
General Elec. Co.
Hagan Corp.
Mason-Neilan
Penn Electric Switch
Refrigerating Spec.
Square D Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.

Safety Fuel Shut-Off

Bailey Meter Co.
Brown Inst. Co.
Denver Fire Clay
Detroit Lubricator
Dickson Co.
Foster Engg.
Gen. Controls
Hagan Corp.
Mason-Neilan
National Airoil
Partlow Corp.
Perfex Corp.
Reliance Gauge Column
Spencer Thermostat
United Cinephone
Viking Inst. Co.
Wilgus Mfg. Co.

Speed

Allen-Bradley
Area Regulators
Askania Reg. Co.
Bailey Meter Co.
Beck Co.
Brown Inst. Co.
Esterline-Angus
General Elec. Co.
Hagan Corp.
Hydraulic Press
Republic Flow Meters
United Cinephone
Viking Inst. Co.

Steam

Area Regulators
Am. Meter Co.
Askania Reg. Co.
Bailey Meter Co.
Bellfield Co.
Boylston Steam Specialties
Bristol Co.
Brown Inst. Co.
Cash Co.
Davis Reg. Co.
Julian D'Este
Fisher Governor
Foster Engg.
Foxboro Co.
Hagan Corp.
Hydraulic Press
Klipfel Mfg. Co.
Mason-Neilan
Mercon Regulator
Northern Equip.
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vaughn G. E. Witt
Wilgus Mfg. Co.

REGULATORS AUTOMATIC

Steam Pressure

American District
Am. Meter Co.
Area Regulators
Askania Reg. Co.
Atlas Valve Co.
Bailey Meter Co.
Bellfield Co.
Boylston Steam Spec.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Clifford Mfg. Co.
Consol. Ashcroft
Davis Reg. Co.
Defender Auto. Reg.
Julian D'Este
Detroit Lubricator
Fisher Governor
Foster Engg.
Foxboro Co.
Hagan Corp.
Klipfel Mfg. Co.
Marsh Corp.
Mason-Neilan
Mercon Regulator
Northern Equip.
Penn Electric Switch
Perfex Corp.
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Sc. Inst. Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vaugh G. E. Witt
Watts Regulator
Wilgus Mfg. Co.

Temperature

Am. Inst. Co.
Area Regulators
Askania Reg. Co.
Atlas Valve
Automatic Prod. Co.
Bailey Meter Co.
Barber Colman
Beck Co.
Bristol Co.
Brooke Engg.
Brown Inst. Co.
Burling Inst. Co.
Central Scientific Co.
Clifford Mfg. Co.
Consol. Ashcroft
Cooper Owen Thermometer
Cutler-Hammer
Defender Auto. Reg.
Julian D'Este
Detroit Lubricator
Dickson Co.
Eastern Engineering
Engelhard, Inc.
Fish-Schurman
Foster Engg.
Foxboro Co.
Friez & Sons
Gen. Controls
General Elec. Co.
Claud S. Gordon Co.
H-B Inst. Co.
Hagan Corp.
Hays Corp.
Johnson Service
Klipfel Mfg. Co.
Leeds & Northrup
Liquidometer Co.
Marsh Corp.
Mason-Neilan
Micro Switch Corp.
Minn. Honeywell
Parks-Cramer
Partlow Corp.
Penn Electric Switch
Perfex Corp.
Powers Reg. Co.
Precision Thermo.
Refrigerating Spec.
Sc. Inst. Co.
Spencer Thermostat
Sterling Engg. Co.
Struthers-Dunn
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Viking Inst. Co.
Vaughn G. E. Witt

Time

Area Regulators
Bristol Co.
Cramer & Co.
Eagle Signal Corp.
Foxboro Co.
General Control Co.
General Elec. Co.
Johnson Service
Marsh Corp.
Mason-Neilan
Minn. Honeywell
Paragon Elec. Co.
Penn Electric Switch
Perfex Corp.
Powers Reg. Co.
Spencer Thermostat
States Co.
Struthers-Dunn
Tagliabue Mfg. Co.
Taylor Inst. Cos.
United Cinephone
Zenith Elec. Co.

REGULATORS AUTOMATIC

Vacuum

Am. Inst. Co.
Area Regulators
Atlas Valve
Bailey Meter Co.
Bellfield Co.
Bookel & Co.
Bristol Co.
Brown Inst. Co.
Cash Co.
Central Scientific Co.
Consol. Ashcroft
Cutler-Hammer
Davis Reg. Co.
Defender Auto. Reg.
Julian D'Este
Detroit Lubricator
Esterline-Angus
Fisher Governor
Foster Engg.
Foxboro Co.
General Elec. Co.
Klipfel Mfg. Co.
Mason-Neilan
Minn. Honeywell
Penn Electric Switch
Perfex Corp.
Powers Reg. Co.
Republic Flow Meters
Square D Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
United Cinephone
Vaugh G. E. Witt
Wilgus Mfg. Co.

Viscosity

General Elec. Co.
United Cinephone

Voltage

Allis Chalmers
Am. Transformer Co.
Electric Specialty
Esterline-Angus
Etna Electric
Ferranti, Inc.
General Elec. Co.
R. C. A. Mfg. Co.
Raytheon Mfg. Co.
Roller-Smith Co.
States Co.
Tagliabue Mfg. Co.
United Cinephone
Ward Leonard

Water

Askania Reg. Co.
Atlas Valve Co.
Bailey Meter Co.
Bellfield Co.
Bender Warrick
Boylston Steam Specialty
Bristol Co.
Brown Inst. Co.
Cash Co.
Davis Reg. Co.
Defender Auto. Reg.
Julian D'Este
Fish-Schurman
Fisher Governor
Foster Engg.
Hagan Corp.
International Filter
Klipfel Mfg. Co.
Mason-Neilan
Mercon Regulator
Northern Equip.
Penn Electric Switch
Plouff Co.
Powers Reg. Co.
Refrigerating Spec.
Republic Flow Meters
Simplex Co.
Spencer Thermostat Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vaugh G. E. Witt

Water Pressure

Area Regulators
Askania Reg. Co.
Atlas Valve
Bailey Meter Co.
Bellfield Co.
Boylston Steam Specialty
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Davis Reg. Co.
Julian D'Este
Detroit Lubricator
Fisher Governor
Foster Engg.
Foxboro Co.
Hagan Corp.
Klipfel Mfg. Co.
Liquid Level Con.
Mason-Neilan
Mercon Regulator
Minn. Honeywell
Northern Equip.
Penn Electric Switch
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Spencer Thermostat
Square D Co.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vaugn G. E. Witt
Viking Inst. Co.
Watts Regulator
Wilgus Mfg. Co.

REGULATORS AUTOMATIC

Welding

Bastian Blessing
Cutler-Hammer
General Control Co.
General Elec. Co.
Plouff Co.
Square D. Co.
Union Carbide Co.
United Cinephone

REGULATORS, MANUAL (Non-Automatic)

Bailey Meter Co.
Beck Bros.
Brown Inst. Co.
Foxboro Co.
General Elec. Co.
Roller-Smith Co.
Tagliabue Mfg. Co.
Ward Leonard

RELAYS

Auto

Guardian Elec.
C. E. Nichols

Circuit Control

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch Co.
Bendix Marine Prod.
Brown Inst. Co.
Cutler-Hammer
Friez & Sons
G-M Labs.
General Elec. Co.
Guardian Elec.
Bertrand F. Miller
Penn Electric Switch
Perfex Corp.
Sigma Inst., Inc.
Signal Engg. Mfg. Co.
Spencer Thermostat
Struthers-Dunn
United Cinephone
Ward Leonard

Continuous Current

Allen-Bradley
Automatic Switch
Bender Warrick
Cutler-Hammer
General Elec. Co.
Guardian Elec.
H-B Inst. Co.
Hart Mfg.
Muter Co.
Radiart Corp.
Signal Engg. Mfg. Co.

Control

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch Co.
Bender Warrick
Brown Inst. Co.
Cutler-Hammer
Detroit Lubricator
Electric C & M
Esterline-Angus
Friez & Sons
G-M Labs.
Gen. Controls
General Elec. Co.
Guardian Elec.
H-B Inst. Co.
Hagan Corp.
Landis & Gyr
D. H. McCorkle
Bertrand F. Miller
Perfex Corp.
Sigma Inst., Inc.
Signal Engg. Mfg. Co.
Spencer Thermostat
Square D Co.
Struthers-Dunn
United Cinephone
Ward Leonard
Weston Elec. Inst.

Demand Totalizing

Eastern Specialty
General Elec. Co.
Hagan Corp.
Landis & Gyr
United Cinephone
Westinghouse E & M

Electro-Magnet

Allen-Bradley
Automatic Elec.
Automatic Switch
Cutler-Hammer
Eagle Signal Corp.
Friez & Sons
G-M Labs.
General Elec. Co.
Guardian Elec.
Hart Mfg.
Kellogg Switchboard
Bertrand F. Miller
Perfex Corp.
Precision Thermo.
Sigma Inst. Inc.
Signal Engg. Mfg.
Struthers-Dunn

RELAYS

Electro-Magnet

Ward Leonard
Western Electro Mech.
Zenith Elec. Co.

Heavy Duty

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch Co.
Cutler-Hammer
General Elec. Co.
Signal Engg. Mfg.
Square D Co.
Ward Leonard
Zenith Elec. Co.

Instrument Controlled

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch Co.
Bailey Meter Co.
Brown Inst. Co.
Friez & Sons
Gen. Controls
Guardian Elec.
H-B Inst. Co.
Penn Electric Switch
Perfex Corp.
Precision Thermo.
Radiart Corp.
Roller-Smith Co.
Signal Engg. Mfg.
Spencer Thermostat
Struthers-Dunn
United Cinephone
Weston Elec. Inst. Corp.

Light Sensitive

See Photoelectric below

Magnetic

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch
Bunnell & Co.
Cutler-Hammer
Detroit Lubricator
Friez & Sons
G-M Labs.
Gen. Controls
General Elec. Co.
Guardian Elec.
H-B Inst. Co.
Hart Mfg.
Industrial Eng.
Muter Co.
Penn Electric Switch
Perfex Corp.
Pfaltz & Bauer
Precision Thermo.
Radiart Corp.
Sigma Inst.
Signal Engg. Mfg.
Square D Co.
Struthers-Dunn
United Cinephone
Ward Leonard
Zenith Elec. Co.

Mercury

Am. Inst. Co.
Automatic Elec.
Continental Elec. Co.
General Elec. Co.
Guardian Elec.
H-B Inst. Co.
Struthers-Dunn
Ward Leonard

Mercury Tube

Am. Inst. Co.
Automatic Temp. Control
Boston Auto Gage
Brown Inst. Co.
G-M Labs.
General Elec. Co.
Guardian Elec.
Hart Mfg.
D. H. McCorkle
Radiart Corp.
Struthers-Dunn
Western Electric Mech.

Motor Driven Time Delay

Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Cramer & Co.
Cutler-Hammer
Eagle Signal Corp.
General Elec. Co.
Signal Engg.
Struthers-Dunn
Ward Leonard
Western Electro Mech.
Weston Elec. Inst. Corp.
Zenith Elec. Co.

Movable Coil A. C.

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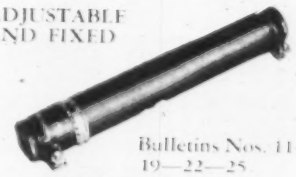

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Ind. Eng.
Penn Electric Switch
Radiart Corp.
Roller-Smith Co.
Signal Engg. Mfg. Co.
Square D Co.
Ward Leonard

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Etna Electric Works
General Elec. Co.
Roller-Smith Co.
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Cutler-Hammer
Ess Inst. Co.
Etna Electric
G-M Labs.
General Elec. Co.
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Lumenite Elec. Co.
Pfaltz & Bauer
Photobell Corp.
J. Thos. Rhamstine
Sigma Inst.
United Cinephone
Ward Leonard
Weston Elec. Inst. Corp.

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Automatic Elec.
General Elec. Co.
Bertrand F. Miller
Roller-Smith Co.
Struthers-Dunn
Weston Elec. Inst. Corp.

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Allen-Bradley
Am. Inst. Co.
Automatic Elec.
Automatic Switch Co.
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General Elec. Co.
Hagan Corp.

RELAYS
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Signal Engg. Mfg.
Struthers-Dunn
Western Electro Mech.
Weston Elec. Inst.

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Esterline-Angus
General Elec. Co.
Landis & Gyr
Potter Co.
Roller-Smith Co.
General Elec. Co.
Precision Thermo
Signal Engg. Mfg.

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Am. Inst. Co.
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Etna Electric
G-M Labs.
Gen. Controls
General Elec. Co.
Guardian Elec.
H-B Inst. Co.
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Precision Thermo
Radiart Corp.
Roller-Smith Co.
Rubicon Co.
Sigma Inst.
Signal Engg. Mfg.
Struthers-Dunn
Triplett Elec. Inst. Co.
United Cinephone
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Automatic Elec.
G-M Labs.
Radiart Corp.
Signal Engg. Mfg. Co.
Struthers-Dunn
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Friez & Sons
General Elec. Co.
Guardian Elec.
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Radiart Corp.
Signal Engg. Mfg.
Spencer Thermostat
Struthers-Dunn
Ward Leonard
Weston Elec. Inst. Corp.

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Am. Inst. Co.
Automatic Elec.
Cramer & Co.
Cutler-Hammer
Eagle Signal Corp.
Friez & Sons
G-M Labs.
General Elec. Co.
Guardian Elec.
Industrial Eng.
Paragon Elec. Co.
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Signal Engg. Mfg.
Struthers-Dunn
Ward Leonard
Western Electro Mech.
Weston Elec. Inst. Corp.
Zenith Elec. Co.

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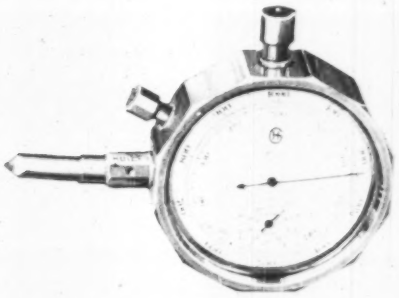

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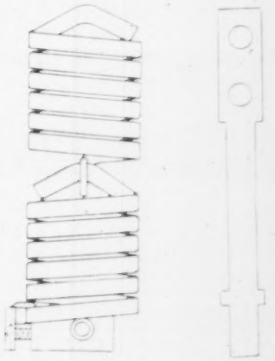

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R. Fuess, Inc.
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Biddle Co.
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R. Fuess, Inc.
Gaertner Scientific
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X-Ray
Biddle Co.
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See Photometers, Spectro

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Bausch & Lomb
Central Scientific Co.
R. Fuess, Inc.
Gaertner Scientific
Hellige, Inc.
Leitz, Inc.
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Stellar
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Mico Inst. Co.

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Central Scientific Co.
R. Fuess, Inc.
Gen. Physical Lab.
Pfaltz & Bauer
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Biddle Co.
Bristol Co.
Brown Inst. Co.
Central Scientific Co.
Consol. Ashcroft
Cramer & Co.
Cumings Mach. Works
Elec. Speed Indic.
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Stewart Warner
Herman H. Stieht
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Westinghouse E & M Co.
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Bailey Meter Co.
Bristol Co.
Brown Inst. Co.
Commercial Eng. Labs.
Consol. Ashcroft
Cramer & Co.
Esterline-Angus
Gaertner Scientific
General Elec. Co.
John E. Hand
Leeds & Northrup
Pierce Watch Co.
Viking Inst. Co.
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R. Fuess, Inc.
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Machinist's
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See Cells, Standard

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Fish-Schurman
Hellige, Inc.
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Eppley Lab.
Weston Elec. Inst. Co.

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General Radio Co.
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Roller-Smith Co.

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Central Scientific Co.
General Radio Co.
Leeds & Northrup
Roller-Smith Co.
Rubicon Co.
Herman H. Stieht

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Pratt & Whitney

Mass
W. & L. E. Gurley

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Roller-Smith Co.
Rubicon Co.

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Marsh Corp.

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Biddle Co.
Cambridge Inst. Co.
General Radio Co.
Leeds & Northrup
Rubicon Co.
Sensitive Res. Inst. Co.
Shallcross Mfg. Co.
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General Elec. Co.
General Radio Co.

Temperature
Leeds & Northrup
Precision Thermo.

Time
General Radio Co.

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Cutler-Hammer, Inc.
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General Elec. Co.
Product Devel.
Roller-Smith Co.
Square D Co.
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See Tapes, Steel

STELLAR SPECTROSCOPES
See Spectroscopes, Stellar

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Westinghouse X-Ray

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See Tester, Stiffness (Paper)

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See Gages, Strain

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SULPHUR DIOXIDE
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See Gages, Surface

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See Ammeters, Surge-Crest

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Guardian Elec.
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Perfex Corp.
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Ward Leonard
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General Elec. Co.
Meter Devices Co.
Micro Switch Corp.
Muter Co.

Pyrometer
Brown Inst. Co.
General Elec. Co.
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Automatic Switch Co.
Continental Elec. Co.
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H-B Inst. Co.
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Micro Switch Corp.
Muter Co.
Penn Electric Switch
Perfex Corp.
Production Inst.
Ward Leonard
Zenith Elec. Co.

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Brown Inst. Co.
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Haven Co.
General Elec. Co.
General Control Co.
Guardian Elec.
Hart Mfg. Co.
Lewis Engg. Co.
Meter Devices Co.
Micro Switch Corp.
Production Inst.
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Shallcross Mfg. Co.

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Beck Co.
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Electrical, See Forks, Synchronization

SYNCHRONOUS MOTORS
See Motors, Synchronous

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Pioneer Inst. Co.
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Scherr Co.
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Viking Inst. Co.
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Pierce Watch Co.
Pioneer Inst. Co.
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Scherr Co.
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Herman H. Sticht

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See Remote Metering

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See Weights, Test

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See also object of measurement and control

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See Airspeed Indicator Testers

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See Altimeter Testers

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Am. Mach. & Metals
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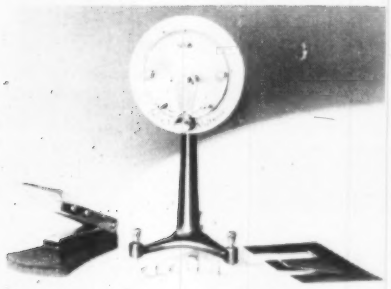

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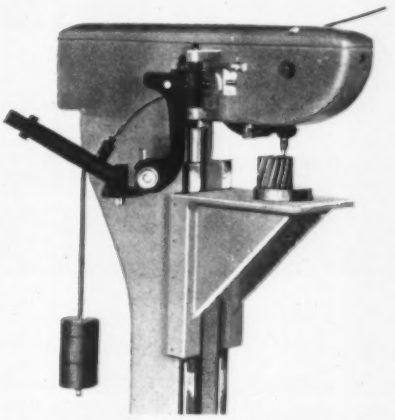

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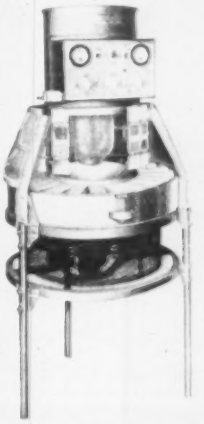

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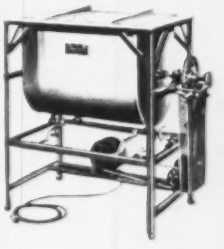

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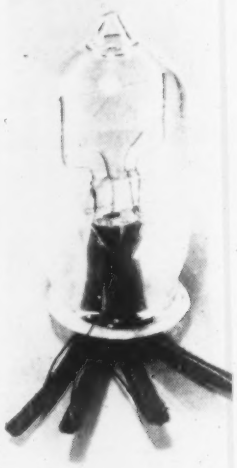

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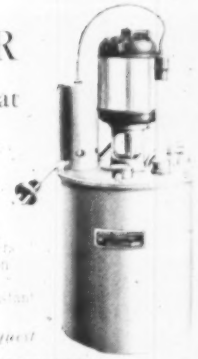

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Viscosimetry

Pamphlet HT 251 on request

HOPPLER VISCOSIMETER

For determining the absolute viscosity of pure liquids, solutions, emulsions, soaps, oils, etc., from 0.01 to 1,000,000 Centipoises.

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Range from 0.01 to 1,000,000 Centipoises.

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For determining the absolute viscosity of pure liquids, solutions, emulsions, soaps, oils, etc., from 0.01 to 1,000,000 Centipoises.

Bulletin UV 260 on request

JENA COLORED OPTICAL FILTER GLASSES

Uniform, stable, selective transmission in all regions of the spectrum.

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Royal Berlin Laboratory Porcelain Ware

For high temperature work.

Catalog RB 250 on request

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For gas analysis, extraction and filtration of corrosive materials.

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Model 251M Portable Timer

AUTOMATIC TIMERS

for standard equipment and accessory use.

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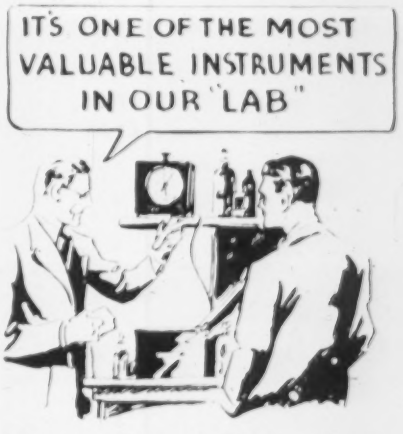
AUTOMATIC TIMER CO.
Graybar Bldg New York, N. Y.



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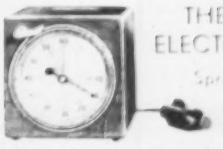

THE STANDARD ELECTRIC TIME CO.
Springfield, Mass.

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TIMERS, AUTOMATIC
Automatic Reset
General Elec. Co.
Guardian Elec.
Industrial Engineering
Powers Reg. Co.
Production Inst.
Self Thermo
Tate-Jones & Co.
Western Electric Mach.
Zenith Elec. Co.

TOOLMAKER'S FLATS
Am. Inst. Co.
Carl Zeiss, Inc.

TOPOGRAPHIC INSTRUMENTS
Berger & Sons
Eastern Specialty Co.
W. & L. E. Gurley
Keuffel & Esser Co.
Carl Zeiss, Inc.

TORQUE GAGE
Bristol Co.

TORSIOGRAPH
Baldwin-Southwark
Commercial Eng. Labs.

TORSION METERS
Cambridge Mach. Works
General Elec. Co.
Claud S. Gordon Co.
Herman A. Holz
Olsen Co.

TOTAL CARBON APPARATUS
Part Inst. Co.

TOTALIZERS
Demand
Esterline Angus
General Elec. Co.
Kollsman Inst. Co.
United Chemiphote
Westinghouse E & M Co.

Electric Energy
Bristol Co.
Esterline Angus
General Elec. Co.
Landis & Gyr
Lincoln Meter Co., Inc.
Westinghouse E & M Co.

Fluid Flow
Bailey Meter Co.
Bowser & Co.
Bristol Co.
Brown Inst. Co.
Builders Iron Foundry
Foxboro Co.
Industrial Inst. Co.
International Filter
Mason-Neilan
Republic Flow Meters
Simplex Co.
Taglıabue Mfg. Co.
Taylor Inst. Cos.

Running Time
Bristol Co.
Cramer & Co.
General Elec. Co.
Industrial Inst. Co.
Mason-Neilan
Production Inst.
United Chemiphote
Warren Telechron
Westinghouse E & M Co.

TRAFFIC SIGNALLING DEVICES
See Signalling Devices, Traffic

TRAMMELS
Steel Beam
Union Tool Co.

TRANSFORMERS
Instrument
Annin & Co.
Assoc. Research Inc.
Elec. Facilities Inc.
Esterline Angus
Friez & Sons
General Elec. Co.
Hickok Elec. Inst. Co.
Landis & Gyr
Bertrand F. Miller
Raytheon Mfg. Co.
Roller-Smith Co.
Rubicon Co.
Herman H. Sticht
Westinghouse E & M Co.
Weston Elec. Inst. Co.

TRANSFORMERS
Laboratory
Am. Inst. Co.
Am. Transformer Co.
Annin & Co.
Assoc. Research Inc.
Clough-Brengle
Dongan Elec. Mfg.
Eastern Specialty Co.
Elec. Facilities Inc.
General Elec. Co.
General Radio Co.
Halldorson Co.
Jefferson Electric
Bertrand F. Miller
Raytheon Mfg. Co.
Roller-Smith Co.
Stator Co.
Herman H. Sticht
Westinghouse E & M Co.
Weston Elec. Inst. Co.

Phasing
Eastern Specialty Co.
General Elec. Co.
Stator Co.

Split Core
Elec. Facilities Inc.
General Elec. Co.
H-D Elec. Co.
Roller-Smith Co.
Rubicon Co.
Western Electric Mach.
Westinghouse E & M Co.

TRANSITS
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Keuffel & Esser Co.
Kolesch & Co.
Lowell Vidget
E. Weber & Co.
David White Co.

Pocket
Wm. Ainsworth & Sons
W. & L. E. Gurley
Mieo Inst. Co.
Warren-Knight Co.
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TRUCK MILEAGE RECORDERS
Ohmer Fare Register
Pittsburgh Taximeter Co.

TRUCK-TIME RECORDERS
Durant Mfg. Co.
Internatl. Business Mach.
Ohmer Fare Register
Pittsburgh Taximeter Co.

TRUCK, TIME & MILEAGE RECORDERS
Cramer & Co.
Ohmer Fare Register
Pittsburgh Taximeter Co.

TUBES
See Also Gas & Vapor Discharge Tubes

Cathode Ray
See Cathode Ray

Nessler
See Nessler

Oil Centrifuge
See Oil Centrifuge

Venturi
See Venturi

Pitot
See Pitot

Polariscope
Akatos, Inc.
Eimer & Amend
Hellige, Inc.
Pfaltz & Bauer
Precision Sc. Co.

Precision Bore,
See Precision Bore

Sounding
E. S. & J. D. Negus

Spectrum
See Spectrum

Ultra-Violet Light,
See Ultra-Violet Light Sources

Vacuum
Industrial Electronics

TUBES
X-Ray
Gen. Elec. X-Ray
Philips Metalix
Westinghouse X-Ray

TUNING FORKS
Electrically Driven
See Forks, Tuning

TURBIDIMETER
Akatos, Inc.
Am. Inst. Co.
Central Scientific Co.
Eimer & Amend
Fisher Scientific Co.
Hellige, Inc.
Industrial Electronics
International Filter
Part Inst. Co.
Pfaltz & Bauer
Precision Sc. Co.
Rawson Elec. Inst. Co.
Rubicon Co.
Carl Zeiss, Inc.

TURN INDICATOR TESTERS
See Testers, Turn Indicator

TWIST COUNTERS
See Counters, Twist

ULTRA-VIOLET LIGHT SOURCES
See Light Sources

U-TUBE MANOMETERS
See Manometers

VACUUM
Indicators
Allen Elec.
Bailey Meter Co.
Bellfield Co.
Brown Inst. Co.
Central Scientific Co.
Consol. Ashcroft
Detender Auto. Reg.
Foxboro Co.
General Elec. Co.
Hays Corp.
Industrial Inst. Co.
Marsh Corp.
Mason-Neilan
Moeller Instrument
Parks Co.
Potter Co.
Rawson Elec. Inst.
Rawson Elec. Inst.
Republic Flow Meters
Star Brass Mfg.
Taglıabue Mfg. Co.
Taylor Inst. Cos.

Recorders
Bailey Meter Co.
Bristol Co.
Brown Inst. Co.
Barbers Iron Fdry.
Cochrane Corp.
Consol. Ashcroft
Detender Auto. Reg.
Dickson Co.
Eimer & Amend
Esterline Angus
Foxboro Co.
General Elec. Co.
Hays Corp.
Industrial Inst. Co.
Marsh Corp.
Mason-Neilan
Republic Flow Meters
Star Brass Mfg. Co.
Taglıabue Mfg. Co.
Taylor Inst. Cos.
Uehling Inst.

VACUUM GAGES
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Continental Elec. Co.
R. Fuess, Inc.
General Elec. Co.

Ionization
Backon-Frink
R. C. A. Mfg. Co.
Winslow Engg. Co.

Liquid-column
Ace Glass Inc.
Bacharach Ind. Inst.
Consol. Ashcroft
Detender Auto. Reg.
John Dubrovin
Eimer & Amend
Foxboro Co.
Meriam Co.
Moeller Instrument
Parks Co.
Precision Thermo.
Stromberg Motoscope
Superior Meter Co.
Taglıabue Mfg. Co.
Taylor Inst. Cos.
Uehling Inst.

McLeod
Ace Glass Inc.
Central Scientific Co.
Eimer & Amend
Winslow Engg. Co.

VACUUM, HIGH (below 1 mu)
Controllers
Bristol Co.
Foxboro Co.
General Elec. Co.
Industrial Inst.
Penn Electric Switch
Taglıabue Mfg. Co.
Vaughn G. E. Wirt

Indicators
Central Scientific Co.
Eimer & Amend
Foxboro Co.
General Elec. Co.
Marsh Corp.
Rawson Elec. Inst. Co.
Taglıabue Mfg. Co.
Winslow Engg. Co.

Recorders
Bristol Co.
Foxboro Co.
General Elec. Co.
Marsh Corp.
Taglıabue Mfg. Co.

VACUUM SPECTROGRAPHS
See Spectrographs, Vacuum

VACUUM TUBES
See Tubes, Vacuum

VACUUM TUBE BRIDGES
See Bridges, Vacuum Tube

VACUUM TUBE RELAYS
See Relays, Vacuum Tube

VACUUM TUBE VOLTMETERS
See Voltmeters, Vacuum Tube

VALVE-OPERATING DEVICES
Electric motor
Automatic Temp. Control
Barber-Colman
Beck Co.
Brown Inst. Co.
Cochrane Corp.
Cramer & Co.
Cutler-Hammer, Inc.
Dickson Co.
Electric Specialty
Foxboro Co.
Friez & Sons
General Elec. Co.
Leeds & Northrup
Northern Equip.
Taglıabue Mfg. Co.

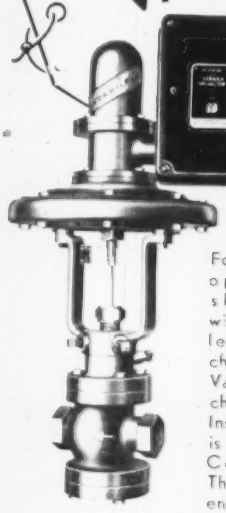
Electric solenoid
Automatic Switch Co.
Barber-Colman Co.
Brown Inst. Co.
Cramer & Co.
Cutler-Hammer, Inc.
Elec. Valve Mfg. Co.
Friez & Sons
General Elec. Co.
Guardian Electric
Hagan Corp.
International Filter
Mason-Neilan
Northern Equip.
Ploutf Co.
Refrigerating Spec.
Taglıabue Mfg. Co.
Vickers, Inc.

Hydraulic
Area Regulators
Bailey Meter Co.
Clifford Mfg. Co.
Foster Engg. Co.
Hagan Corp.
Industrial Inst.
International Filter
Mason-Neilan
Northern Equipment
Ploutf Co.
Republic Flow Meters
Vickers Inc.

Pneumatic
Area Regulators
Bailey Meter Co.
Brown Inst. Co.
Consol. Ashcroft
Foxboro Co.
Hagan Corp.
Industrial Inst. Co.
Mason-Neilan
Northern Equip.
Ploutf Co.
Powers Reg. Co.
Republic Flow Meters
Taglıabue Mfg. Co.
Taylor Inst. Cos.

VALVE BOX FINDER
See Finder, Valve Box

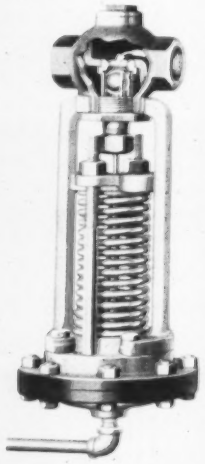
FOXBORO
REG. U. S. PAT. OFF.
VALVES



Foxboro Valves for air-operated controllers should be specified with Foxboro Controllers—because the characteristic of the Valve should fit the characteristic of the Instrument. The Valve is a vital part of a Control installation. The Foxboro line is engineered to assure the best results.

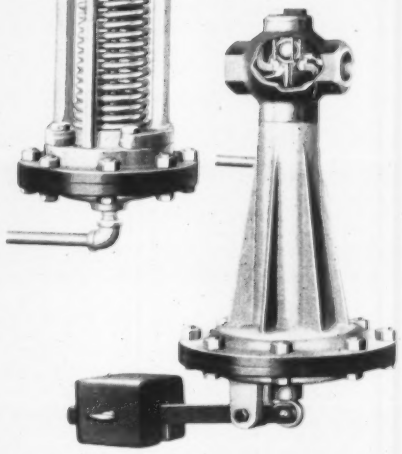
For complete information write for Bulletin No. 214. The Foxboro Company, 46 Neponset Avenue, Foxboro, Mass., U. S. A. Branch offices in 25 Principal Cities.

KLIPFEL BALL TYPE
Reducing Valves
for
STEAM • WATER • AIR



Four different types to meet all conditions.

No. 400 Spring Type
No. 410 Weight-Lever
No. 420 Mercury Column
No. 430 Air Loaded



Stainless Steel Ball and Seat
Tight Closing, Greater Capacity
Closer Regulation

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2647 W. Harrison St. Chicago, Ill.

VALVE POSITION INDICATORS

Automatic Temp. Control
Bailey Meter Co.
Beck Co.
Bendix Marine Prod.
Foxboro Co.
General Elec. Co.
International Filter
Mason-Neilan
Northern Equipment
Radiart Corp.
Taylor Inst. Cos.

VALVES
Ammonia & SO2

Area Regulators
Cash Co.
Gen. Controls Co.
Hoke Inc.
Mason-Neilan
Plouff Co.
Refrigerating Spec.
Star Brass Mfg. Co.
Taylor Inst. Cos.
Vogt Machine Co.
Wallace & Tiernan
Vaughn G. E. Witt

Automatic Shut-Off

Am. Meter Co.
Automatic Switch Co.
Auto. Valve Conv. Co.
Beck Co.
Belfield Co.
Bristol Co.
Brown Inst. Co.
Cash Co.
Davis Reg. Co.
Fisher Governor Co.
Foster Engg. Co.
Gen. Controls Co.
Claud S. Gordon Co.
Hagan Corp.
Klipfel Mfg. Co.
Lammert & Mann
Milwaukee Gas Spec.
Penn Electric
Plouff Co.
Refrigerating Spec.
Ruggles-Klingemann
Spencer Thermostat
Tagliabue Mfg. Co.
Vickers Inc.
Wallace & Tiernan

Automatic Solenoid

Automatic Switch Co.
Belfield Co.
Brown Inst. Co.
Consol. Ashcroft
Davis Reg. Co.
Detroit Lubricator
Elec. Valve Mfg. Co.
Foster Engg. Co.
Friez & Sons
Gen. Controls Co.
Gen. Controls Co.
General Elec. Co.
Hagan Corp.
H-B Inst. Co.
C. B. Hunt & Son
Klipfel Mfg. Co.
Lammert & Mann
Mason-Neilan
Northern Equipment
Plouff Co.
Refrigerating Co.
Ruggles-Klingemann
Star Brass Mfg. Co.
Tagliabue Mfg. Co.
Viking Inst. Co.

Back Pressure

Area Regulator Co.
Am. Meter Co.
Bailey Meter Co.
Belfield Co.
Boylston Steam
Bristol Co.
Cash Co.
Cochrane Corp.
Connelly Co.
Davis Reg. Co.
Fisher Governor
Foster Engg. Co.
Hagan Corp.
Industrial Inst.
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Nathan Mfg. Co.
Plouff Co.
Refrigerating Spec.
Republic Flow Meters
Ruggles-Klingemann
Taglíabue Mfg. Co.
Taylor Inst. Cos.
Vickers Inc.
Wilgus Mfg. Co.
Vaughn G. E. Witt

Balanced

Am. Meter Co.
Area Regulators
Atlas Valve Co.
Bailey Meter Co.
Belfield Co.
Boylston Steam
Bristol Co.
Cash Co.
Cochrane Corp.
Connelly Co.
Consol. Ashcroft

VALVES
Balanced

Davis Reg. Co.
Julian D'Este
Fisher Governor
Foster Engg. Co.
Hagan Corp.
Industrial Inst.
Klipfel Mfg. Co.
Mason-Neilan
Minn. Honeywell
Nathan Mfg. Co.
Northern Equipment
Plouff Co.
Powers Regulator Co.
Republic Flow Meters
R S Products
Ruggles-Klingemann
Tagliabue Mfg. Co.
Vickers Inc.
Watts Regulator
Wilgus Mfg. Co.

Blow-Off

Am. Inst. Co.
Belfield Co.
Cochrane Corp.
Consol. Ashcroft
Detroit Lubricator
Fairbanks Co.
Mason-Neilan
Nathan Mfg. Co.
Plouff Co.
Tagliabue Mfg. Co.

Check Valves

The Bastian Blessing Co.
Belfield Co.
Cochrane Corp.
Connelly Co.
Consol. Ashcroft
Davis Reg. Co.
Fairbanks Co.
Fisher Governor
Foster Engg. Co.
Mason-Neilan
Nathan Mfg. Co.
Plouff Co.
Star Brass Mfg. Co.
Vickers Inc.
Wallace & Tiernan

Chlorine

Everson Mfg. Co.
Hoke Inc.
Mason-Neilan
Plouff Co.
R S Products
Wallace & Tiernan

Compressed Gas

Connelly Co.
Fisher Governor
Hoke Inc.
Parr Inst. Co.
Plouff Co.
Tagliabue Mfg. Co.
Wallace & Tiernan

Constant Pressure

Atlas Valve Co.
Belfield Co.
Boylston Steam
Connelly Co.
Davis Reg. Co.
Fisher Governor Co.
Foster Engg. Co.
Hagan Corp.
Hoke Inc.
Klipfel Mfg. Co.
Mercoid Regulator
Northern Equipment
Plouff Co.
Powers Reg. Co.
Refrigerating Spec.
Republic Flow Meters
R S Products
Ruggles-Klingemann
Tagliabue Mfg. Co.
Wallace & Tiernan
Wilgus Mfg.

Diaphragm

Area Regulators
Atlas Valve Co.
Bailey Meter Co.
Belfield Co.
Boylston Steam
Bristol Co.
Brown Inst. Co.
Cash Co.
Connelly Co.
Consol. Ashcroft
Davis Reg. Co.
Defender Auto. Reg.
Fisher Governor
Foster Engg. Co.
Foxboro Co.
Hagan Corp.
Hoke Inc.
Industrial Inst. Co.
Johnson Service Co.
Klipfel Mfg. Co.
Mason-Neilan
D. H. McCorkle
Northern Equip.
Parks-Cramer Co.
Payne Furnace
Plouff Co.
Power Reg. Co.
Refrigerating Spec.
Ruggles-Klingemann
Spencer Thermostat
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Wallace & Tiernan
Wilgus Mfg. Co.
Vaughn G. E. Witt

VALVES
Differential

Atlas Valve Co.
Bailey Meter Co.
Belfield Co.
Boylston Steam
Brown Inst. Co.
Cash Co.
Connelly Co.
Davis Reg. Co.
Fisher Governor Co.
Foster Engg. Co.
Hagan Corp.
Hoisery Co.
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Northern Equip.
Plouff Co.
Tagliabue Mfg. Co.
Wilgus Mfg. Co.

Electrically Operated

Am. Inst. Co.
Automatic Switch Co.
Automatic Temp. Control
Beck Co.
Belfield Co.
Bristol Co.
Brown Inst. Co.
Cochrane Corp.
Consol. Ashcroft
Davis Reg. Co.
Detroit Lubricator
Dickson Co.
Elec. Valve Mfg.
Foster Engg. Co.
Foxboro Co.
Friez & Sons
General Elec. Co.
Claud S. Gordon Co.
Hannifin Mfg. Co.
Klipfel Mfg. Co.
Lammert & Mann
Leeds & Northrup
D. H. McCorkle
Northern Equip.
Payne Furnace
Plouff Co.
Refrigerating Spec.
Republic Flow Meters
R S Products
Ruggles-Klingemann
Spencer Thermostat Co.
Star Brass Mfg. Co.
Supreme Elec. Prod.
Tagliabue Mfg. Co.
Vickers Inc.

High Pressure

Am. Meter Co.
Area Regulators
Atlas Valve Co.
Belfield Co.
Foster Engg. Co.
Hagan Corp.
Hoke Inc.
Industrial Inst. Co.
Mason-Neilan
Northern Equipment
Plouff Co.
R S Products Corp.
Star Brass Mfg. Co.
Vickers Inc.
Vogt Machine

Indicating Steam Control

Area Regulators
Atlas Valve Co.
Automatic Temp. Control
Foster Engg. Co.
Hagan Corp.
H-B Inst. Co.
Mason-Neilan
Plouff Co.
Power Reg. Co.

Motor Operated

Automatic Temp. Control
Barber-Colman Co.
Bristol Co.
Brooke Engg. Co.
Brown Inst. Co.
Davis Reg. Co.
Dickson Co.
Foxboro Co.
Friez & Sons
General Elec. Co.
Claud S. Gordon Co.
Leeds & Northrup
Minn. Honeywell
Ruggles-Klingemann
Sterling Engg. Co.
Taylor Inst. Cos.
Thwing-Albert
Vogt Machine
Wallace & Tiernan

Needle

Automatic Switch Co.
Meriam Co.
Minn. Honeywell
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vogt Machine
Wallace & Tiernan

Pressure Relief

Am. Inst. Co.
Ashton Valve Co.
Atlas Valve Co.
Bastian-Blessing Co.
Belfield Co.

VALVES
Pressure Relief

Boylston Steam
Bristol Co.
Cochrane Corp.
Connelly Co.
Consol. Ashcroft
Davis Reg. Co.
Fisher Governor
Foster Engg. Co.
Hagan Corp.
Industrial Inst. Co.
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Plouff Co.
Powers Reg. Co.
Refrigerating Spec.
Republic Flow Meters
Spencer Thermostat
Star Brass Mfg. Co.
Tagliabue Mfg. Co.
Vickers Inc.
Viking Inst. Co.
Watts Regulator
Wilgus Mfg.
Vaughn G. E. Witt

Proportional Air-Gas

Am. Meter Co.
Automatic Temp. Control
Bailey Meter Co.
Beck Co.
Bristol Co.
Brown Inst. Co.
Connelly Co.
Dickson Co.
Fisher Governor Co.
Hagan Corp.
Mason-Neilan
Republic Flow Meters

Reducing

American District
Area Regulators
Atlas Valve Co.
Bailey Meter Co.
Belfield Co.
Boylston Steam
Brown Inst. Co.
Cash Co.
Consol. Ashcroft
Davis Reg. Co.
Julian D'Este
Fisher Governor
Foster Engg. Co.
Hagan Corp.
Hannifin Mfg.
Hoke Inc.
Industrial Inst.
Klipfel Mfg. Co.
Mason-Neilan
Mercoid Regulator
Minn. Honeywell
Northern Equipment
Plouff Co.
Powers Reg. Co.
Republic Flow Meters
Ruggles-Klingemann
C. E. Squires
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vickers Inc.
Watts Regulator
Wilgus Mfg. Co.
Vaughn G. E. Witt

Refrigeration

Automatic Prod. Co.
Automatic Switch Co.
Belfield Co.
Clifford Mfg. Co.
Detroit Lubricator
Foster Engg. Co.
General Elec. Co.
Refrigerating Spec.
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Vogt Machine

Regulating

Area Regulators
Bailey Meter Co.
Barber-Colman Co.
Beck Co.
Belfield Co.
Boylston Steam
Brooke Engg. Co.
Brown Inst. Co.
Cash Co.
Cochrane Corp.
Connelly Co.
Davis Reg. Co.
Defender Auto. Reg.
Dickson Co.
Everson Mfg.
Fisher Governor
Friez & Sons
Hagan Corp.
Industrial Inst.
Klipfel Mfg. Co.
Lammert & Mann
Mason-Neilan
Mercoid Regulator
Minn. Honeywell
Northern Equipment
Plouff Co.
Powers Reg. Co.
Refrigerating Spec.
Republic Flow Meters
Ruggles-Klingemann
Tagliabue Mfg. Co.
Taylor Inst. Cos.
Wilgus Mfg.
Vaughn G. E. Witt

VALVES
Safety Fuel Shut-Off

Automatic Switch Co.
Auto. Valve Conv.
Brown Inst. Co.
Davis Reg. Co.
Detroit Lubricator
Fisher Governor
Foster Engg. Co.
General Combustion
Claud S. Gordon Co.
Hagan Corp.
Lammert & Mann
Mason-Neilan
McDonnell & Miller
Minn. Honeywell
National Airoil
Northern Equipment
Payne Furnace
Republic Flow Meters
R S Products
Viking Inst. Co.
Wilgus Mfg. Co.

Solenoid

Am. Inst. Co.
Automatic Prod. Co.
Automatic Switch
Barber-Colman Co.
Belfield Co.
Brown Inst. Co.
Davis Reg. Co.
Detroit Lubricator
Elec. Valve Mfg.
Friez & Sons
General Elec. Co.
General Sales
Claud S. Gordon Co.
Hagan Corp.
H-B Inst. Co.
C. B. Hunt
Lammert & Mann
Mason-Neilan
Minn. Honeywell
Northern Equipment
Plouff Co.
Refrigerating Spec.
Ross Operating
R S Products
Ruggles-Klingemann
Supreme Elec.
Tagliabue Mfg. Co.
Viking Inst. Co.

Thermostat

Atlas Valve Co.
Automatic Prod. Co.
Barber-Colman
Belfield Co.
Dickson Co.
Friez & Sons
General Elec. Co.
Hagan Corp.
Industrial Inst.
Klipfel Mfg. Co.
Mason-Neilan
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Minn. Honeywell
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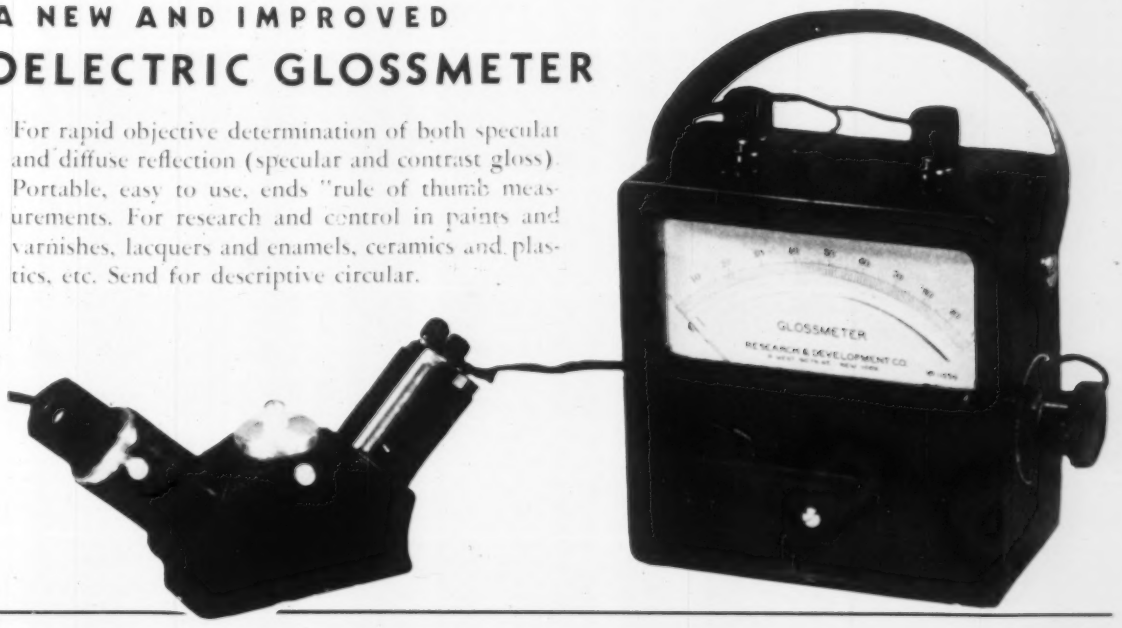

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Bowser & Co., Inc., S. F., 1230 Bowser Ave., Fort Wayne, Ind.
Boylston Steam Specialty Co., 116 West Illinois St., Chicago, Ill.
Braun Corporation, 2260 E. 15th St., Los Angeles, Calif.
Bristol Company, Waterbury, Conn. (Parts I & II)
Brodie Co., Inc., Ralph N., 61 & Lowell Sts., Oakland, Calif.
Brooke Engineering Co., 175 W. Washington St., Philadelphia, Pa. (Part II)
Brown Instrument Co., 4482 Wayne Ave., Philadelphia, Pa. (Part I)
Brown & Sharpe Mfg. Company, Providence, Rhode Island
Brush Development Co., 3311 Perkins Ave., Cleveland, Ohio (Part II)
Bryden Co., 90 Church St., Waltham, Mass. (Part II)
Buehler, Adolph L., 228 N. La Salle St., Chicago, Ill.
Buff & Buff Mfg. Co., 98 Green St., Jamaica Plain, Boston, Mass.
Buffalo Meter Co., 2947 Main St., Buffalo, N. Y. (Part II)
Buffalo Scale Company, Inc., Buffalo, New York
Builders Iron Foundry, 9 Codding St., Providence, R. I.
Bunnell & Co., J. H., 81 Prospect Street, Brooklyn, N. Y.
Burling Instrument Co., 239-241 Springfield Ave., Newark, N. J. (Part I)
Burt Scientific Labs., Robert C., 211 Clay St., Pasadena, Calif.
Burton-Rogers Co., Sales Div. of Hoyt Electrical Instrument Works, 755 Boylston St., Boston, Mass. (Part II)
Bushnell, B. O., 541 N. Kings Rd., Los Angeles, Calif. (Part I)
Byram, H. F., 28 Bathgate Place, Newark, N. J.
Calibron Products, Inc., 51 Lakeside Ave., West Orange, N. J. (Part II)
Cambridge Instrument Co., Inc., Grand Central Terminal, New York, N. Y.
Cameron Surgical Specialty Co., 666 W. Division St., Chicago, Ill.
Cardwell Mfg. Corp., Allen D., 81 Prospect St., Brooklyn, N. Y.
Carter Motor Co., 361-99 West Superior St., Chicago, Ill.
Cash Co., A. W., Decatur, Ill.
Central Scientific Co., 1700 Irving Park Blvd., Chicago, Ill. (Part I)
Chaney Mfg. Co., Springfield, Ohio
Chace Company, W. M., 1600 Beard Avenue, Detroit, Mich. (Part I)
Chart Production Co., 274 Madison Ave., New York, N. Y. (Part II)
Chaslyn Company, 4527 Ravenswood, Chicago, Ill.
Chatillon & Sons, John, 85 Cliff St., New York, N. Y. (Part II)
Chelsea Clock Co., Boston, Mass. (Part II)
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago, Ill.
Chicago Dial Indicator Co., 544 W. Washington St., Chicago, Ill.
Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati, Ohio
Clark & Sons Company, Alvan, 58 Bay Street, West Somerville, Mass.
Chas. J. Clark Blast Meter, Gladbrook, Iowa
Clay-Adams Co., Inc., 25 E. 26th St., New York, N. Y.
Clebar Watch Co., Inc., 551 Fifth Ave., New York, N. Y.
Cleveland Electric Laboratories Co., 1988 E. 66th St., Cleveland, Ohio
Clifford Mfg. Co., 564 E. First, St., Boston, Mass. (Parts I & II)
Clough-Brengle Co., 2815 W. 19th St., Chicago, Ill.
Cochrane Corp., 17th St. below Allegheny Ave., Philadelphia, Pa. (Parts I & II)
Coleman Electric Co., Inc., 310 Madison St., Maywood, Ill.
Columbia Electric Mfg. Co., 4519 Hamilton Ave., Cleveland, Ohio
Commercial Engineering Labs., 4612 Woodward Ave., Detroit, Mich. (Part I)
Comtor Company, 87 Rumford Avenue, Waltham, Mass.
Conant, George H., 719 Watson St., Ripon, Wisconsin
Connelly Iron Sponge & Gov. Co., 200 So. 2nd St., Elizabeth, N. J.
Consolidated Ashcroft Hancock Co., Bridgeport, Conn.
Continental Electric Co., Geneva, Ill. (Part II)
Conner Over Thermometer Co., Main Street, Poquabuck, Conn.
Coors Porcelain Co., Golden, Colo.
Cornell-Dubilier Electric Corp., So. Plainfield, N. J. (Part I)
Corning Glass Works, Corning, N. Y.
Cramer & Co., Inc., R. W., 67-69 Irving Place, New York, N. Y. (Parts I & II)
Crosby Steam Gage & Valve Co., 10 Roland St., Boston, Mass.
Crowley & Co., Henry L., 1 Central Ave., W. Orange, N. J.
Cummings Machine Works, 255 Atlantic Ave., Boston, Mass.
Cutler Hammer, Inc., 1230 St. Paul Ave., Milwaukee, Wis.
Daniel Orifice Fitting Co., 3750 E. P. Ave., Los Angeles, Calif.
Dayen Co., 158 Summit St., Newark, N. J.
Davis Regulator Co., 2511 So. Washington Ave., Chicago, Ill.
Dayker Corp., Martin, P. O. Box 571, Long Beach, Calif.
Defender Automatic Reg. Co., 308 So. 8th St., St. Louis, Mo. (Part I)
Denver Fire Clay Co., 2301 Blake St., Denver, Colo.
Julian D'Este Co., 6 Spice Street, Charlestown, Mass.
Detroit Lubricator Co., 5842 Trumbull Ave., Detroit, Mich.
Detroit Testing Machine Co., 5137 Trumbull Ave., Detroit, Mich.
Dickson Co., 7420 Woodlawn Ave., Chicago, Ill.
Diebold Safe & Lock Co., Canton, Ohio
Dietert Co., Harry W., 9330 Roselawn Ave., Detroit, Mich. (Part I)
Dietzen Co., Eugene, 2425 Sheffield Ave., Chicago, Ill.
Dongan Elec. Mfg. Co., 2987-3001 Franklin St., Detroit, Mich.
Drafto Co., Cochranton, Pa.
Dubrosin, John, 2947 N. Kenneth Ave., Chicago, Ill.
Dumont Labs., Inc., Allen B., 532 Valley Road, Upper Montclair, N. J. (Parts I & II)
Durant Mfg. Co., 1830 N. Buffum St., Milwaukee, Wis. (Part I)
Dwyer Mfg. Co., F. W., 565 W. Washington St., Chicago, Ill.
Eagle Signal Corp., 202 26th St., Moline, Ill. (Part I)

Eastern Engineering Company, 15 Fox Street, New Haven, Connecticut.
Eastern Specialty Co., 3617 N. 5th St., Philadelphia, Pa. (Part II)
Edo, Inc., Hugh H., 2960 Hunting Park Avenue, Philadelphia, Pennsylvania.
Economy Electric Devices Co., 37 W. Van Buren St., Chicago, Ill.
Edelmann & Co., E., 2732-56 Logan Blvd., Chicago, Ill.
Eimer & Amend, Third Ave., 18th to 19th St., New York, N. Y. (Part II)
Eitzen Co., Louis C., 201 W. 57th St., New York, N. Y.
Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland, Ohio.
Elec. Heat Control Apparatus Co., 175 Fifth Ave., New York, N. Y.
Electric Machinery Mfg. Co., 1400 Ave. N. E., Minneapolis, Minn.
Electric Specialty Co., Stamford, Conn.
Electric Speed Indicator Co., 14618 Rayes Avenue, Lakewood, Ohio.
Electric Switch Corp., 1105 Union St., Columbus, Ind.
Electric Valve Mfg. Co., 64 Murray St., New York, N. Y.
Electrical Facilities, Inc., 1221 Hobart St., Oakland, Calif.
Electrocon Corp., 6 Varick St., New York, N. Y. (Part II)
Electro Medical Laboratory, Inc., Holliston, Mass.
Electronic Control Corp., 841 W. Jackson St., Chicago, Ill.
Ellison Draft Gage Co., 214 W. Kenzie St., Chicago, Ill.
Elsbert Mfg. Co., Inc., 353 W. Grand Ave., Chicago, Ill.
Emerson Apparatus Company, 171 Fremont Street, Melrose, Mass.
Emerson Electric Mfg. Co., St. Louis, Mo.
Engelhard, Inc., Charles, 700 Chestnut St., Newark, N. J. (Parts I & II)
Eppley Laboratory, Inc., 12 Sheffield Ave., Newport, R. I. (Parts I & II)
Ess Instrument Co., 30 Irving Place, New York, N. Y. (Part I)
Esterline-Angus Co., Indianapolis, Ind.
Etna Electric Works, 410 E. 15th St., New York, N. Y.
Everson Mfg. Co., 627 W. Lake St., Chicago, Ill.
Exact Weight Scale Co., 941 W. 5th St., Columbus, Ohio.
Fairchild Instrument Corp., Watertown, N. Y.
Fairbanks Co., 393 Lafayette St., New York, N. Y.
Fairbanks, Morse & Co., 900 So. Wabash Ave., Chicago, Ill.
Fecker, J. W., 1954 Perrysville Avenue, Pittsburgh, Penna.
Federal Pneumatic Systems, Inc., 127 N. Dearborn St., Chicago, Ill.
Federal Products Corp., 1144 Eddy St., Providence, R. I. (Parts I & II)
Fee & Stemwedel, 1949 N. Pulaski Rd., Chicago, Ill.
Fellows Gear Shaper Co., Springfield, Vt.
Felt & Tarrant Mfg. Co., 1735 N. Paulina St., Chicago, Ill.
Fetter Co., R. Y., 161 Devonshire St., Boston, Mass.
Ferranti, Inc., 30 Rockefeller Plaza, New York, N. Y.
Ferris Instrument Corp., Boonton, N. J.
Fisher Governor Co., Marshalltown, Iowa.
Fischer & Porter Co., 110 W. Penn St., Germantown, Philadelphia, Pa.
Fisher Scientific Co., 711-723 Forbes St., Pittsburgh, Pa. (Part II)
Fish-Schurman Co., 250 E. 43d St., New York, N. Y. (Part I)
Fluid Meters, Inc., Chrysler Bldg., New York, N. Y.
Ford Motor Co.—Johansson Div., 3674 Schaefer Rd., Dearborn, Mich. (Part I)
Foster Engineering Co., 109-117 Monroe St., Newark, N. J.
Foxboro Co., 16 Neponset Ave., Foxboro, Mass. (Parts I & II)
Fraas Glass Works, Francis L., Conshohocken, Pa.
Friez & Sons, Inc., Julien P., Baltimore St. & Central Ave., Baltimore, Md. (Parts I & II)
Friess, Inc., R., 215 W. 55th St., New York, N. Y.
Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago, Ill. (Parts I & II)
Geier & Bluhm, Inc., 607 River St., Troy, N. Y.
Genales, Andrew, 29 Second Ave., Nyack, N. Y.
General Combustion Corporation, 2218 W. Lake Street, Chicago, Ill.
General Control Co., 197 Sidney St., Cambridge, Mass.
General Controls Co., 1370 Harrison St., San Francisco, Calif.
General Electric Co., 1 River Rd., Schenectady, N. Y.
General Electric Vapor Lamp Co., 410 Eighth St., Hoboken, N. J.
General Electric X-ray Corp., 2012 Jackson Blvd., Chicago, Ill.
General Physical Laboratory, 509 Fifth Ave., New York, N. Y.
General Plate Co., Attleboro, Mass.
General Radio Co., 30 State St., Cambridge, Mass. (Part I)
General Sales & Products Corp., Cohoes, N. Y.
General Scientific Corp., 1929 S. Kedzie Ave., Chicago, Ill.
Geophysical Instrument Co., 1315 Half St., S. W., Washington, D. C.
Glass Engraving Co., 3604 Park Ave., New York, N. Y. (Parts I & II)
Globe Phone Mfg. Corp., 2 Linden Street, Reading, Mass.
Globe Tool & Engg. Co., Dayton, Ohio (Part II)
G-M Laboratories, Inc., 1731-35 Belmont Ave., Chicago, Ill. (Part II)
Gogan Machine Corp., 1440 E. 55th St., Cleveland, Ohio.
Glogau & Co., 538 S. Clark St., Chicago, Ill.
Gordon Co., Claud S., 1524 So. Western Ave., Chicago, Ill. (Parts I & II)
Gow-Mac Instrument Co., 20 Washington Pl., Newark, N. J. (Part II)
Gray Instrument Co., 642 W. Johnson St., Philadelphia, Pa.
Green, Arthur R., 284 Harris Ave., Needham, Mass.
Green, Henry J., 1191 Bedford Ave., Brooklyn, N. Y.
Greenfield Tap & Die Corp., Greenfield, Mass.
Greiner Company, Otto R., 55 Plane Street, Newark, N. J.
Guardian Electric Mfg. Company, 1627 West Walnut Street, Chicago, Ill.
Gulbransen Publishing Co., 2-8 Garden St., Newark, N. J.
Gurley, W. & L. E., 514 Fulton St., Troy, N. Y.
Hagan Corp., 600 Bowman Bldg., Pittsburgh, Pa.
Haines Gauge Co., 119 So. 4th St., Philadelphia, Pa.
Halldorson Co., 4500 Ravenswood Ave., Chicago, Ill.
Halliburton Oil Well Cementing Co., Duncan, Okla.
Hammond Clock Co., 2911 N. Western Avenue, Chicago, Ill.
Hand & Co., John E., 3d & Chestnut Sts., Philadelphia, Pa.
Hannalin Manufacturing Co., 621-631 So. Kolmar Ave., Chicago, Ill.
Hardinge Company, York, Pa.
Hardwick, Hindle, Inc., 40 Herman St., Newark, N. J.
Hart Mfg. Co., Hartford, Conn.
Hart Mfg. Co., R. E., 420 Ward Bldg., Battle Creek, Mich.
Hasler-Tel Co., 461 8th Ave., New York, N. Y. (Part II)
Hays Corporation, Michigan City, Indiana (Parts I & II)
Hass Laboratories, Box 752, Pawtucket, R. I.
H-B Instrument Co., 2518 N. Broad Street, Philadelphia, Pa. (Parts I & II)
H-D Electric Co., 100 W. Monroe St., Chicago, Ill.
Hellige, Inc., 3718 Northern Blvd., Long Island City, N. Y. (Part II)
Heuszey Co., Watertown, Wis.
Henze Instrument Re-Builders & Mfg. Co., 601 Jefferson Street, Hoboken, New Jersey.
Hever Products Company, Inc., 740 Washington Avenue, Belleville, New Jersey.
Hickok Electrical Instrument Co., 15611 Du Pont Ave., Cleveland, Ohio (Part II)
Hierzcell & Sons, Wm., 295 Pearl St., New York, N. Y.
Hoffman Company, S. O., 835 Howard Street, San Francisco, California.
Hoke, Inc., 122 Fifth Ave., New York, N. Y. (Part II)
Holtzer-Cabot Electric Company, 125 Amory Street, Boston, Massachusetts.
Holz, Herman A., 167 E. 33d St., New York, N. Y.
Hoyt Electrical Instrument Works, see Ruston-Rogers Co.
Huddleson, J. S. F., 104 Hanover Street, Boston, Mass.
Humboldt Mfg. Co., 2044 N. Whipple St., Chicago, Ill.
Hunt & Son, C. B., Salem, Ohio.
Hydraulic Press Co., Mount Gilead, Ohio.
Illinois Testing Laboratories, Inc., 132 West Austin St., Chicago, Ill. (Parts I & II)
Indicating Calipers Corp., 506 E. 19th St., New York, N. Y.
Industrial Apparatus Company, 720 N. Wabash Avenue, Chicago, Illinois.
Industrial Electronics Laboratories, 1623 Crest Road, Cleveland Heights, Ohio.
Industrial Engineering Corp., Evansville, Indiana.
Industrial Instrument Co., 96 E. Miller St., Akron, Ohio.
Instrument Service Co., Inc., 310 Twelfth St., Hoboken, N. J.
International Broadcasting Equipment Co., 1238 Fullerton Ave., Chicago, Ill.
International Business Machine Corp., 270 Broadway, New York, N. Y.
International Equipment Company, 352 Western Avenue, Brighton, Boston, Mass.
International Filter Company, 59 E. Van Buren St., Chicago, Illinois.
International Resistance Co., 401 No. Broad St., Philadelphia, Pa.
Jacobs Bros., Inc., 26 Washington St., Brooklyn, N. Y.
Jefferson Electric Co., 25th & Madison Sts., Bellwood, Ill.
Jeffrey Manufacturing Company, Columbus, Ohio.
Jensen, Henry C., 100 Newton St., Waltham, Mass.
Jensen Instrument Co., 624 E. 8th St., Los Angeles, Calif. (Part II)
Johansson Gage, see Ford Motor Co.
Johnson Service Co., Milwaukee, Wis.
Johnston & Jennings Company, Ocero Div., 877 Addison Road, Cleveland, Ohio.
Johnston Manufacturing Company, 2825 East Hennepin Avenue, Minneapolis, Minn.
Jones & Lamson Machine Co., Springfield, Vt.
Jones, Motrola Sales Co., 450 Whitlock Ave., New York, N. Y.
Kelley-Koett Mfg. Co., Covington, Ky.
Kellogg Switchboard & Supply Co., 1066 W. Adams St., Chicago, Ill.
Kern Company, 136 Liberty St., New York, N. Y.
Kessler & Mumberg, 41 Fulton St., New York, N. Y.
Kessling Thermometer Co., E., 682-684 Jamaica Ave., Brooklyn, N. Y.
Keuffel & Esser Co., 300 Adams St., Hoboken, N. J.
Kewaunee Mfg. Co., 106 Lincoln St., Kewaunee, Wis. (Part II)
Kimble Glass Co., Vineland, N. J.
Klett Mfg. Co., 179 E. 87th St., New York, N. Y.
Klippel Mfg. Co., 2651 W. Harrison St., Chicago, Ill. (Part II)
Knowles Scale Works, Lowell, Massachusetts.
Kolesch & Company, 138 Fulton Street, New York, New York.
Kollmorgen Optical Co., 767 Wythe Ave., Brooklyn, N. Y.
Kollsman Instrument Co., Inc., 80-08 Forty-Fifth Ave., Elmhurst, N. Y. (Part II)
Krouse, G. N., Box 101, Station B, Columbus, Ohio.
Laboratory Furniture Co., Inc., 37-18 Northern Blvd., Long Island City, N. Y.
Lammert & Mann Co., 215 N. Wood St., Chicago, Ill.
LaMotte Chemical Products Co., McCormick Bldg., Baltimore, Md.
Lampkin Laboratories, Bradenton, Florida.
Landis & Gyr, 104 5th Ave., New York, N. Y. (Part II)
Lantz-Phelps Corp., 120 Linden Ave., Dayton, Ohio.
Arthur S. LaPine & Co., 111 W. Hubbard St., Chicago, Ill. (Part II)
Leeds & Northrup Co., 4900 Stenton Ave., Philadelphia, Pa. (Parts I & II)
Leitz, Inc., E., 730 Fifth Ave., New York, N. Y. (Part I)
Leonard Electric Mfg. Co., 3905 Perkins Ave., Cleveland, Ohio.
Leopold, Volpel & Company, 425 N. E. 70th Avenue, Portland, Oregon.
Lewis Engineering Co., Naugatuck, Conn. (Parts I & II)
Lincoln Optics, Monadnock Block, Chicago, Ill.
Lincoln Meter Co., Inc., Springfield, Ill.
Lindberg Engineering Co., 218 No. Laflin St., Chicago, Ill.
Link Engineering & Mfg. Co., 1054 W. Baltimore Ave., Detroit, Mich.
Liquidometer Co., Inc., 36-16 Skillman Ave., Long Island City, N. Y. (Part II)
Littelfuse Laboratories, 1238 Lincoln Ave., Chicago, Ill. (Part I)
Loewenberg, F., 10 E. 40 St., New York, N. Y.
Lombard Governor Co., Ashland, Mass.
Lufkin Rule Co., Saginaw, Mich.
Lumenite Electric Co., Old Colony Bldg., Chicago, Ill.
Lundquist Tool & Mfg. Co., 57 Jackson St., Worcester, Mass.
Lux Clock Mfg. Co., Inc., 95 Johnson St., Waterbury, Conn.
Magnaflux Corporation, 605 W. Washington Blvd., Chicago, Illinois.
Magnetic Analysis Corp., 42-40 Twelfth St., Long Island City, N. Y.
Magnetic Gauge Company, 60 East Bartges Street, Akron, Ohio.
Marchant Calculating Machine Co., Emeryville, Calif.
Marsh Corp., Jas. P., 2063 Southport Ave., Chicago, Ill.
Marston Co., C. A., 500 Washington St., Braintree, Mass. (Part II)
Martindale Electric Company, Box 617, Edgewater Branch, Cleveland, Ohio.
Mason-Neilan Regulator Co., 1190 Adams St., Boston, Mass. (Part II)
McCorkle, D. H., Co., Sixth & Bancroft Way, Berkeley, Calif.
McDonnell & Miller, Wrigley Building, Chicago, Illinois.
McFarlin Company, 29 W. Marion Ave., Youngstown, Ohio.
McNeill Eng. Equip. Co., T. W., 1057 West Van Buren St., Chicago, Ill.
Mercoid Regulator Co., 2357 No. 29th St., Milwaukee, Wis.
Meriam Co., 1955 W. 112th St., Cleveland, Ohio (Part II)
Merrick Scale Mfg. Co., Autumn Street, Passaic, N. J.
Meter Devices Co., 1001 Prospect Ave., S. W., Canton, Ohio.
Metzger & Son, F. F., 2600 North 6th Street, Philadelphia, Penna.
Meylan, A. R. & J. E., 264 West 40 Street, New York, N. Y. (Parts I & II)
Micro Instrument Co., 10 Arrow St., Cambridge, Mass.
Micro Products Co., 529 E. Jefferson Ave., Detroit, Mich.
Miller, Bertrand F., 111-113 Albemarle Avenue, Trenton, New Jersey.
Micro Switch Corp., E. Spring St., Freeport, Ill. (Part I)
Millers Falls Company, Greenfield, Mass.
Milwaukee Gas Specialty Company, Milwaukee, Wis.
Milwaukee Glass Works, Inc., 2336 N. 30th St., Milwaukee, Wis.
Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh, Pa. (Parts I & II)
Mine & Smelter Supply Company, Denver, Colorado.
Mineallac Electric Co., 25 N. Peoria St., Chicago, Ill.
Minneapolis Electric & Construction Co., 80 So. 12th Street, Minneapolis, Minn.
Minneapolis-Honeywell Reg. Co., Minneapolis, Minn.

Roller Instrument Company, Inc., 132 St. & 8th Ave., Richmond Hill, New York
Rogey & Sons, Inc., Wm., Interhaven Ave., Plainfield, N. J.
Rohrhouse Machine Company, York, Pa.
Rorey & Jones, Ltd., 922 So. Hemlock St., Los Angeles, Calif. (Part II)
Rotisell Color Co., 10 E. Franklin St., Baltimore, Md.
Router Company, 1255 So. Michigan Ave., Chicago, Ill.
Rothan Mfg. Co., 250 Park Ave., New York, N. Y.
Rotional Airoil Burner Co., 1327 Girard Ave., Philadelphia, Pa.
Rotional Electric Controller Co., 5817 Ravenswood Ave., Chicago, Ill. (Part I)
National Meter Co., 420 First Ave., Brooklyn, N. Y. (Part II)
National Technical Laboratories, 3330 E. Colorado St., Pasadena, Calif. (Part I)
Natural Gas Equipment, Inc., Petroleum Securities Building, Los Angeles, Calif.
Negus, T. S. & J. D., 60 Pearl Street, New York, New York
Nelson, George F., 2918 Fulton St., Berkeley, Calif.
Neptune Meter Co., 50 W. 50th St., New York, N. Y.
New Jersey Meter Co., Plainfield, N. J. (Part II)
Newark Scale Works, 10-14 Hobson Street, Newark, N. J.
New York Scientific Supply Co., 111 E. 22nd Street, New York, N. Y.
Niagara Electrical Instrument Co., 1 West Genesee St., Buffalo, N. Y.
Nichoff & Co., C. E., 230 W. Superior St., Chicago, Ill.
North Side Tool Co., 17 Maryland Ave., Dayton, Ohio (Parts I & II)
Northern Equipment Company, 1945 Grove Drive, Erie, Pennsylvania
Northern Thermometer Co., Inc., 397 Bridge Street, Brooklyn, New York
Nuhart Fare Register Co., Dayton, Ohio
Nunnitte Mfg. Co., 4835 W. Fullerton St., Chicago, Ill.
Olsen Testing Mach. Co., Tinius, 500 N. Twelfth St., Philadelphia, Pa.
Edward Orton, Jr., Ceramic Foundation, 1445 Summit St., Columbus, Ohio
Palmer Co., 2511 Norwood Ave., Cincinnati, Norwood, Ohio (Parts I & II)
Paragon Elec. Co., 37 W. Van Buren St., Chicago, Ill.
Parks Co., Harry S., 101 N. 33d St., Philadelphia, Pa.
Parks-Cramer Co., Fitchburg, Mass.
Part Instr. Co., 222-52 St., Moline, Ill.
Partlow Corp., 2 Campion Rd., New Hartford, N. Y.
Pastor Stop Watch Co., 43 E. Main St., Waterbury, Conn.
Patterson Screen Company, Towanda, Pennsylvania
Payne Furnace & Supply Co., Beverly Hills, Calif.
Peconella Mfg. Co., 64 Stanhope St., Brooklyn, N. Y.
Penn Electric Switch Co., Box 556, Goshen, Indiana
Perfex Corp., 415 W. Oklahoma Pl., Milwaukee, Wis.
Perkins & Son, Inc., B. F., Holyoke, Mass.
Permutit Company, 330 West 42nd Street, New York, N. Y.
Peters, O. S., 1236 Mt. Olivet Rd., N. E., Washington, D. C.
Peterson & Co., Inc., Leonard, 1222 Fullerton St., Chicago, Ill.
Petrometer Corp., Daily Star Bldg., Long Island City, N. Y. (Part II)
Pfaltz & Bauer, Empire State Bldg., New York, N. Y. (Part II)
Phillips Metalix Corp., 306 S. Columbus Ave., Mt. Vernon, N. Y.
Photobell Corp., 90 Warren St., New York, N. Y.
Pierce Watch Co., 22 W. 48th St., New York, N. Y. (Part II)
Pioneer Instrument Co., Inc., 774 Lexington Ave., Brooklyn, N. Y.
Pittsburgh Equitable Meter Co., 400 Lexington Ave., Pittsburgh, Pa. (Part II)
Pittsburgh Instrument & Machine Co., 1020 Brookdale St., N. S., Pittsburgh, Pa. (Part II)
Pittsburgh Tavameter Company, Point Building, Pittsburgh, Pennsylvania
Plant Company, P. O. Box 1023, Boston, Mass.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.
Pneumercator Co., Inc., 205 E. 10th St., New York, N. Y.
Polaroid Corp., 285 Columbus Ave., Boston, Mass.
Polarized Products Corp., 15-16 10th Ave., Whitestone, N. Y. (Part II)
Polarizing Instrument Co., 5 West 30th St., New York, N. Y. (Part II)
Post Co., Frederick, 3650 No. Hoyne Ave., Chicago, Ill.
Potter Co., 1950 Sheridan Rd., No. Chicago, Ill.
Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill. (Part I)
Practical Instrument Co., 2717 N. Ashland Ave., Chicago, Ill.
Pratt & Whitney, Division Niles-Bement-Pond Co., Hartford, Conn.
Precision Gage & Tool Co., 20 E. 1st St., Dayton, Ohio
Precision Resistor Co., 301 Bullard Ave., Newark, N. J. (Part II)
Precision Scientific Co., 1730-1754 N. Springfield Ave., Chicago, Ill.
Precision Thermometer & Inst. Co., 114 Brookhaven St., Philadelphia, Pa.
Premier Crystal Labs., Inc., 717 Fulton Bldg., New York, N. Y.
Product Development & Engg. Corp., 1001 Euclid Ave., Cleveland, Ohio
Production Instrument Co., 1215 South Wabash Avenue, Chicago, Illinois
Proportioners, Inc., 9 Redding St., Providence, R. I.
Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y. (Part I)
Racine Co., Jules, 20 W. 47th St., New York, N. Y. (Part II)
Radiart Corp., Shaw Ave. at 153rd St., Cleveland, Ohio
Radium Chemical Company, Inc., 1 E. 42nd Street, New York, New York
Rateo, Inc., 601 W. Fifth Ave., Columbus, Ohio
Rawson Electrical Instrument Co., 110 Potter St., Cambridge, Mass. (Parts I & II)
Ray Pressure Snubber Co., Charlotte, N. C.
Raytheon Mfg. Co., 100 Willow St., Waltham, Mass. (Part II)
R. C. A. Manufacturing Co., Camden, N. J.
Reed Small Tool Works, Worcester, Mass.
Refinery Supply Co., 921 E. 4th St., Tulsa, Okla. (Part II)
Refrigerating Specialties Co., 728 So. Sacramento Blvd., Chicago, Ill.
Reliance Gauge Column Co., 5002 Carnegie Ave., Cleveland, Ohio
Reliance Instrument Co., 1135 West Van Buren St., Chicago, Ill.
Republic Flow Meters Co., 2240 Diversey Parkway, Chicago, Illinois
Research & Development Co., 8 West 40th St., New York, N. Y. (Part II)
Rhamstine, J. Thos., 500 East Woodbridge St., Detroit, Mich.
Rhodes, Inc., M. H., 9 Rockefeller Plaza, New York, N. Y.
Riehle, see American Machine & Metals Co.
Rieker Instrument Co., 1919 Fairmont Ave., Philadelphia, Pa.
Ritchie & Sons, Inc., E. S., 112 Cypress St., Brookline, Mass.
Riverbank Laboratories, Geneva, Ill. (Part II)
Robertshaw Thermostat Company, Youngwood, Pa.
Robertson, J. L., 361-11th Broad Street, New York, New York
Rochester Mfg. Co., Rochester, N. Y.
Rockwell Co., Stanley P., 290 Homestead Ave., Hartford, Conn.
Roller-Smith Co., 2132 Woolworth Bldg., New York, N. Y. (Parts I & II)
Ross Operating Valve Co., 4388 Epworth Blvd., Detroit, Mich.
R-S Products Corporation, 4520 Germantown Avenue, Philadelphia, Penna.
Rubicon Co., 29 N. 9th St., Philadelphia, Pa. (Part I)
Riehfel Company, George, 778 Woodward Avenue, Brooklyn, New York
Ruggles-Klingemann Mfg. Co., Salem, Mass.
Ruska & Co., Inc., Walter, 6712 Westchester St., Houston, Texas (Part II)
Ruth Glass Div., Kimble Glass Co., Conshohocken, Pa.
Sarco Company, Inc., 183 Madison Avenue, New York, New York
Schaffer Poidometer Company, 2828 Smallman Street, Pittsburgh, Pennsylvania
Scherr Co., Inc., George, 120 Lafayette Street, New York, N. Y. (Part I)
Sheffield Gage Corp., 1517 E. 30 St., Dayton, Ohio
Schweitzer & Conrad, Inc., 4435 Ravenswood Avenue, Chicago, Ill.
Scientific Glass Apparatus Co., 19 West Alexander St., Bloomfield, N. J.
Scientific Instrument Co., 535 W. Lorned St., Detroit, Mich.
Scientific Instrument Company, 1441 Walnut Street, Berkeley, California
Scott Co., Henry L., Blackstone & Canal Sts., Providence, R. I.
Seederer-Kohlhagen, Inc., 140 New York Ave., Jersey City, N. J.
Seed Trade Reporting Bureau, 2-4 W. Jackson St., Chicago, Ill.
Sensitive Research Instrument Co., 1537 Boston Road, New York, N. Y. (Part I)
Service Recorder Co., 1422 East 31st Ave., Cleveland, Ohio
Seth Thomas Clock Co., Thomaston, Conn.
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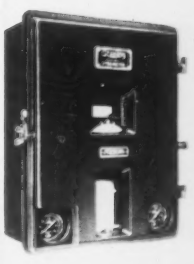

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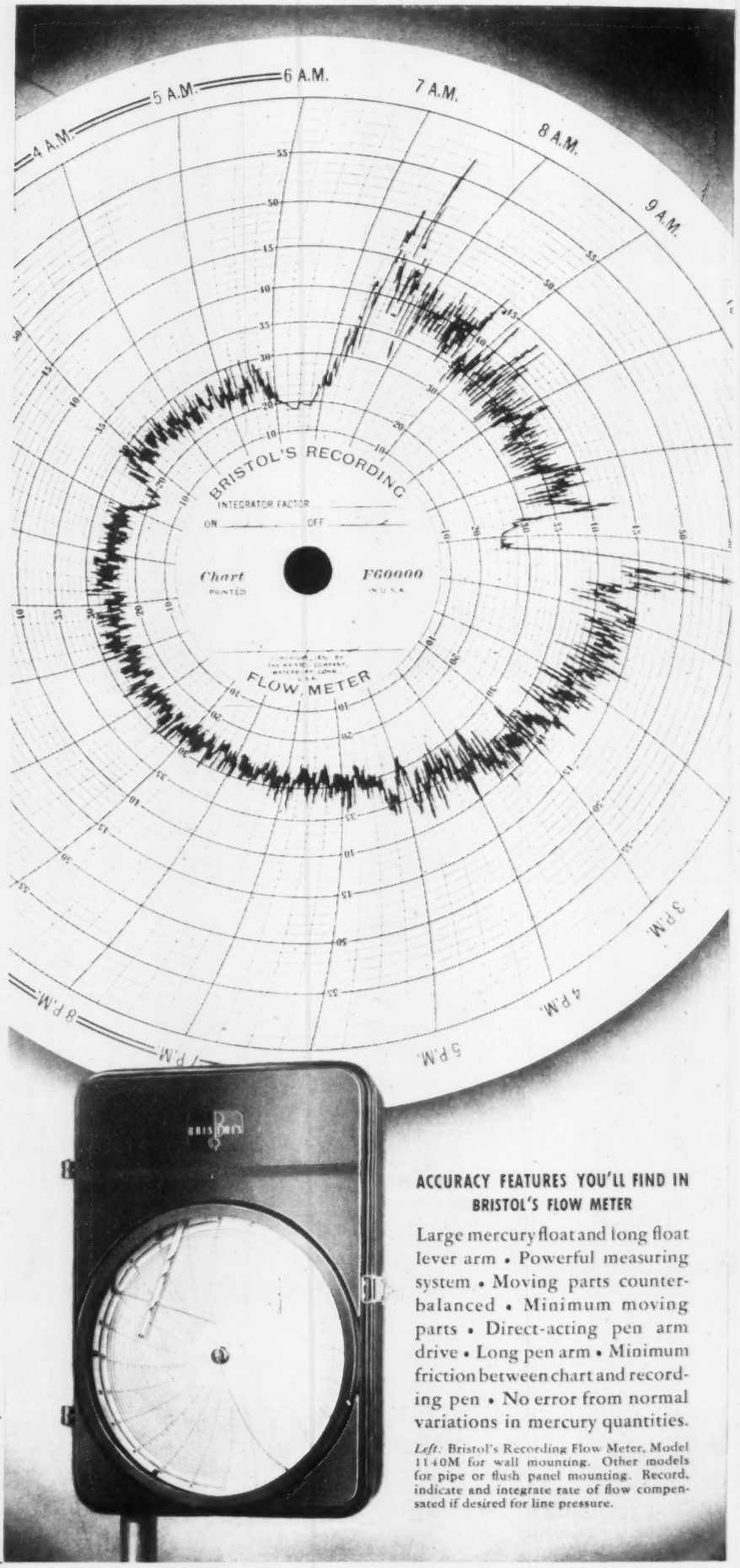

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